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FOUNTAINS ABBEY

THERE has always been a wide diversity of opinion as to the appropriate manner of dealing with ruins and restorations. The history of architecture has been written in stone, and such a record is one which we should preserve at all costs. It is the manner in which the record should be kept which provides the main ground for controversy, and from time to time the occasion arises when the subject becomes a matter for dispute.

During the war the question arose on several occasions when historic buildings were destroyed by enemy action. Whether to plan a rebuilding as nearly identical with the original as possible, or whether to preserve the valuable fragments and add to them an appropriate modern building —each method has secured its adherents, with arguments on each side which appear on the surface to be equally conclusive. One of the outstanding of these instances has been the scheme for rebuilding Coventry Cathedral, where the intention has been to retain the intact tower, and otherwise to express the age in new architectural terms, a decision which has generally met with approval on all sides.

Now there has arisen another case of widespread interest, that of Fountains Abbey, where there is a project afoot to restore a part of the ruin for use as a Benedictine monastery. The fact that the Society for the Protection of Ancient Buildings has come into the open to declare its disapproval of the project has precipitated a direct conflict.

This and similar cases have features in common which are not shared by those instances of war damage to which we have referred, for we are now considering a building which has been ruined and out of service for centuries, and not one which was in use within the memory of this or a near generation. Nor are we in this case considering a minor picturesque ruin, which has acquired an amenity value by the manner in which it has grown into the landscape. Fountains Abbey, on the contrary, is a major record of Gothic architecture, the authenticity of which is beyond dispute. The history which slumbers within its stones provides a quality added to beauty of detail and craftsmanship which cannot be infused into work of repetition.

There is no doubt that the skill of modern craftsmanship and architectural supervision could be brought to bear upon a rebuilding in such a way that the rendering of the work to fill in the gaps would faithfully repeat the original lines of the building, and that the manner of rendering could be such as to leave the extent of authentic remains clear and unmistakable. There can be no dispute as to the feasibility of such a project, and the point of contention will be whether this way of dealing with history is a proper one.

The arguments of those who oppose the project are somewhat as follows: The wonder and admiration which we feel in Gothic architecture arise not only from beauty of form, vastness of conception and liveliness of detail but in the knowledge of free craftsmanship and the enduring quality of fine workmanship. A feeling which goes much deeper than the eye can see loses its intensity when any repetition of its lines is contemplated. We feel this immediately in any church or cathedral where the punctilious restorers of the last century have been left to their own devices. One instinctively assesses the æsthetic quality of such work upon a level far below that of genuine ancient building.

One of the greatest mistakes that can be made, the argument continues, is to think of architecture purely as a visual art. It must be something that appeals not only to the eye but to the intellect, and to all the higher instincts of the human make-up. To see building on a great scale, laboriously carried out in a manner quite foreign to the manners and methods of the times in which it has been built, must be repugnant to the mind, unless such building represents only a minor filling in of the gaps in an ancient work, otherwise largely intact, and where to impose a discordant style would prejudice alike the old and the new. At Fountains Abbey the gaps are no less than the remains, so that the new work would be bound to predominate.

The building of a great church, it is argued, is an event in any generation, and one gathering importance as each materialistic age succeeds another. It seems vital, therefore, that when such a building is contemplated the effort should be as direct and single-minded as were those of the master builders of the Middle Ages, who expressed themselves and the times in which they lived in the stones they laid one upon the other. Surely, then, it is concluded, it is far better for us to take the opportunity of good intent to evolve some great work of art that will add worthiness to the somewhat sterile age in which we find ourselves than to use our labour in the creation of an outer effect that cannot record the truth.

The case for restoration, however, is by no means negligible. First it can be said that there are many precedents for such work—Hexham Abbey, Iona Cathedral and St. David's Cathedral are a few that come readily to mind. These and other buildings, as a result of restoration, have been preserved for all time and put into useful service.

Then it has to be remembered that ruins which are classified as ancient monuments are not allowed to lapse into decay, as they would do in course of time if left to the processes of nature. In point of fact they are carefully preserved as ruins, a special technique having been evolved for dealing with their particular weaknesses and susceptibilities. It may therefore be argued with some reason that if we are prepared to preserve such ruins by special methods of conservation, it is only going a logical step further to roof them in and make them safe and weathertight for all time.

The proposal to restore Fountains Abbey is one on which it is difficult to come to a reasoned conclusion. It can be as well opposed on grounds of sentiment as supported on grounds of realism. All who are interested in this matter await with no little eagerness the report which is being prepared by the architects associated with it, who may throw some new light on the proposal. The decision, however, rests with the Government.

NOTES AND NEWS

Construction and the Architectural Student.

With most of our architectural schools full to capacity, and with many hundreds of young people waiting to start their training, it seems a fitting time to inaugurate some form of teaching in practical building which would give the young architect-to-be an invaluable basis for his training and also, at the same time, be of benefit to the country.

The Government, a correspondent suggests, could allocate varying numbers of students to building firms, expenses would be paid, and after a few months they would be doing valuable work. Enrolment at these architectural schools could be carried through before the training starts, thus giving the student the added impetus that the course is definitely part of his architectural career. It has previously been mentioned in this column that practical work is a very necessary feature in the architect's training, a feature not always fully recognised by many of our schools.

With the labour shortage, and much work to be done, the idea, if organised on sound lines, would soon prove itself of immense value in our reconstruction plans. Instruction would be given by practical men, and a certain amount of drawing could also be done on the site. After a year or more, the student, well grounded in the trades and with a good knowledge of site work, could make a start upon the more theoretical side of his training.

The success of any form of training depends upon the standard of teaching and the choice of curriculum. If a student is intent upon becoming an architect, practical training in building will obviously have a great appeal to him, and if he is given sound instruction by good teachers he would, in a very short time, be able to benefit himself and his country.

Art Centres.

Those who have seen the plans and models of the Art Centres, sponsored by the Arts Council, will realise that at last a scheme is afoot to bring a much-needed innovation into the lives of the people. Many of our local councils have in the past been so busy ministering to our practical needs and bodily health that they have tended to ignore the importance of the arts and graces in life, although under the Museums Act of 1845, City and County Councils were empowered to found and maintain art galleries, and subsequently legislation was extended to range over any cultural activities, which can be supported by local funds. With the founding of the Arts Council, local authorities have somewhere to turn when in need of advice as to conversion of premises or choice of a site for new schemes connected with entertainment and the arts.

The schemes provided by the Arts Council—there are two types which can be adjusted to various site requirements—are commendable for their good open planning. A theatre or concert-hall is provided to seat 600, a restaurant to seat 200, and a reading-room and lecture- and exhibition-room is included. All these separate entities are brought together and housed under one roof; the idea is attractive, and the building, which could be designed in the vernacular of any particular district, would be a credit to any town.

A Growing Movement.

The idea of art centres is gaining much popularity abroad, and in Canada especially this aspect of social life has received much attention. In 1944 a plan was put forward to set aside two million pounds for a 50 per cent. grant-in-aid towards the erection of centres for twenty-five major cities. In providing centres also in the smaller towns, the Government felt that the drift of population from the small to the larger towns would be checked.

Perhaps Alvar Aalto's design for a civic centre in the little mining town of Avesta, in Sweden, gives the best idea as to how a scheme can be developed to include almost all the necessities of everyday social life into one grouped plan. Here on one site are concentrated all the civic buildings—a theatre, a smaller theatre and dance-hall combined, art gallery, an hotel with shops and business premises below, and an assembly hall with many smaller rooms for a variety of purposes. The plan is so devised as to allow the various sections of the whole to function independently if the occasion should arise.

Here, in fact, is a practical plan for giving the inhabitants of a small industrial town a chance to live a full and interesting life. An example has been set, and although one particular town's need is not necessarily as urgent as another's, we have been shown the way.

Getting Some Humour into It.

The state of the architectural profession to-day is so parlous that a more humorous attitude towards things could hardly be for the worse, and many people must be longing for another monument from the pencil and pen of Mr. Osbert Lancaster. Books such as "Home, Sweet Homes," "From Pillar to Post," and "Progress at Pelvis Bay," were masterpieces of their kind, and we feel that now as never before is the time for someone to record the humour and pathos of the housing situation—a situation crying out for treatment by a satirical artist gifted with the art of "constructive tearing to pieces."

We well remember the last drawing in "Home, Sweet Homes," called "Even More Functional" (it succeeds "Functional"), and pictures a Wardens' Post in its full glory of corrugated iron, unbleached canvas and tape-protected windows. As Mr. Lancaster put it: "When Monsieur le Corbusier first propounded his theory of the house as *une machine à habiter*, it may be doubted whether he foresaw the exact form in which it would be translated into fact." All this seems a long time ago now, but subsequent events have proved that many people would grant the Wardens' Shelters as being no particular departure from the typical living conditions of to-day.

The Human Comedy.

A little ceremony, which has in it the seeds for a good farce, is enacted every morning and evening in a town of our acquaintance.

There are many air raid shelters of brick and concrete still standing there, and a lorry, well loaded with lamps, sets out every evening, stops at every shelter, and two lamps are placed on the ground, one fore and one aft, and the lorry continues its journey to the next. In the morning the lorry reappears and the lamps are taken away.

As everybody wants bricks, bricks to build everything from a tool-shed to a house, one would have thought it would have been obvious to even the most unenlightened local council that to remove the shelters and use the material would be a more sensible procedure than wasting time and money in keeping them standing. But it seems not.

Architectural Survey in Trinidad.

The Architectural and Sites Committee of the Trinidad and Tobago Historical Society, of which Mr. R. Fraser Reekie has been elected chairman, recently revealed some proposals in connection with the architectural survey of the Colony. The main object of the survey is to compile a record of buildings and other structures which, by reason of their architectural or historical interest, illustrate aspects of the growth and development of the Colony and the various technical and æsthetic influences which have affected Trinidad buildings from time to time. It is intended to use the survey as a basis for a careful and thorough study of factors which influence buildings in any country or district—for example—local conditions, including social, political, religious and economic factors and available natural resources. These findings will then be presented to the public.

Proposed Health Centre, Coventry.

The Family Health Club Housing Society (Coventry), Ltd., has recently purchased 250 acres of land just outside the boundary of the City of Coventry and

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COMING EVENTS

Friday, October 25.

Library Association (London and Home Counties Branch). Week-end Conference, Eastbourne. 7.30 p.m.

Wednesday, October 30.

Royal Institution of Chartered Surveyors. Middlesex and Urban Essex Junior Branch Sessional Meeting. Mr. P. Cutbush, of the Building Division of the British Standards Institution, to speak. R.I.C.S., 12, Great George-street, S.W.1. 6.30 p.m.

The Architectural Association. Exhibition of Members' Sketches. 36, Bedford-square, W.C.1. 10 a.m. to 6 p.m. Continuing until Nov. 23.

The Architectural Association. Annual General Meeting. Mr. E. Maxwell Fry and Miss Jane B. Drew (FF.), to speak on "Colonial Housing and Planning." 6 p.m.

Thursday, October 31.

Town and Country Planning Association. Capt. R. L. Reiss on "The Rebuilding of Malta." 23, King-street, W.C.2. 1.15 p.m.

Friday, November 1.

The Royal Institution. Dr. Percy Dunsheath, C.B.E., M.A., D.Sc., on "New Problems in Electrical Engineering." Royal Institution, 21, Albemarle-street, W.1. 9 p.m.

Saturday, November 2.

Ecclesiological Society. Visit to St. Paul's Church and St. Nicholas Church, Deptford High-street. 2.30 p.m.

Proposed Health Centre, Coventry.

The Family Health Club Housing Society (Coventry), Ltd., has recently purchased 250 acres of land just outside the boundary of the City of Coventry and

plans to house 2,000 families on this estate. The Society's principal objective is an extension of the experimental work undertaken at the Peckham Health Centre during the interim war years towards the establishment of the principle of positive health.

The whole estate will be planned by the Society's consulting architects, Messrs. Arcon, chartered architects, 81, Piccadilly, W.1, around a Health Centre which is to incorporate the most up-to-date facilities for communal activities and recreation, and, in addition, will provide a six-monthly health overhaul for all members of the Society.

The Plan for Hull.

SOME of the major features of the Abercrombie-Lutyens Plan for the redevelopment of Hull were explained by Sir Patrick at a Press conference held in his London office in Welbeck-street last week. Several members and officials of the Hull Corporation were also present.

The City Corporation has accepted the plan in principle and has already started to implement some of the recommendations contained in the planners' report. War damage in Hull was extensive and widespread and there are 10,000 on the waiting list for homes. Powers are being sought to start replanning over an area of 3,000 acres as a preliminary to the complete solution of the housing problem in the City. Work has commenced on a community planning scheme at Bilton Grange, where it is expected 10,000 people will be housed.

Among the long-term projects is the erection of a suspension bridge across the Humber. When completed it will possess the longest single span in the world. Other points explained by Sir Patrick were :—the City will have three population densities, *i.e.*, an urban density of 75 persons to the acre, a suburban density of 50, and an outer ring of 30; the Plan provides for a 300 per cent. increase in open spaces in the City.

Return from Abroad.

AFTER five years' service abroad, Mr. E. A. A. Rowse, Founder of the School of Planning and of the Association for Planning, is back in Britain. A small party to welcome him back was held at the Association for Planning and Regional Reconstruction on Thursday, October 17.

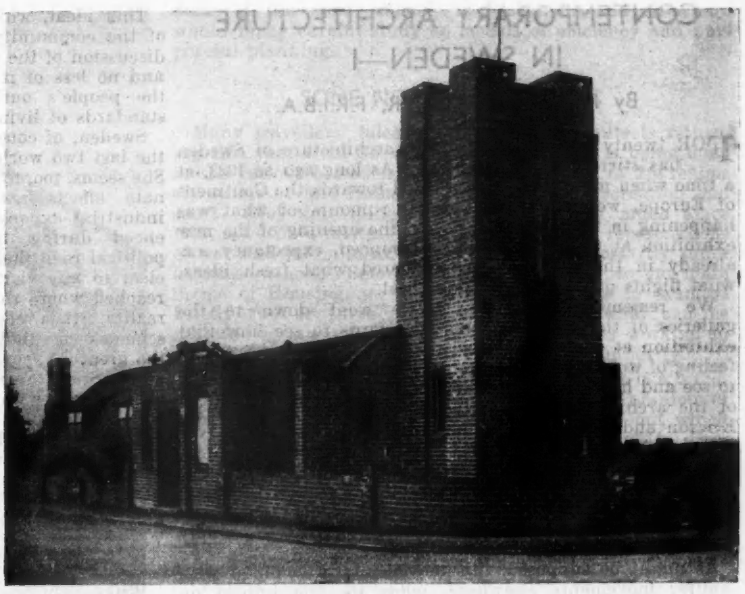
Throughout the war years Mr. Rowse has prepared a comprehensive series of maps and tables planning the redistribution of the population of the British Commonwealth.

Church of All Saints, Nesscliff Garrison.

An illustration on this page shows the Church of All Saints, erected at Nesscliff Garrison, to designs prepared, with only small outside help, by the Garrison engineers and built from salvaged bricks and other materials by men and women of the Garrison, under the enthusiastic direction of the Commandant, Col. Ben Hurst, O.B.E., D.C.M. The nave is a Nissen hut, but the whole of the east end, transepts and sanctuary are built in brick, and throughout the whole of the construction, heating, lighting, decorating and furnishing, only Nesscliff Garrison troops and auxiliaries were used. The building was begun early in the spring of 1944, and the dedication ceremony was performed by the Bishop of Lichfield on January 7, 1945. The full story, which is contained in a well-produced booklet obtainable from Col. Hurst, is a remarkable example of a team effort under inspired leadership.

Proposed Traffic Roundabout at Elephant.

THE London County Council considered on Tuesday a plan for a traffic roundabout at the Elephant and Castle. The area covered by recommendations of the Council's town planning committee covers about 49 acres in Southwark and Lambeth, and a scheme to redevelop the important traffic focal point was mentioned in the County of London Plan. The net site area of the ground affected that has already been cleared or damaged beyond repair is 33 per cent. of the total sites of buildings, while severely damaged but not cleared sites account for another 19 per cent. The completion of the road works would take, it is estimated, 10 to 15 years. The Council is to submit an application to the Ministry of Town and Country Planning.



Church of All Saints, Nesscliff Garrison. (See Note on this page.)

"Mechanisation" Takes Command.

SMALL, smiling, alert Doctor Siegfried Giedion, Swiss architect-philosopher, has now finished his new book. It deals primarily with the impact of mechanisation on the human being. "By mechanisation," explained the Doctor, in the course of a talk organised by the Design and Industries Association at a London hotel recently. "I do not mean locomotives, aeroplanes and such-like evidences of the modern age. I am concerned only with what happens when mechanisation in its simplest form encounters the human." Thus Dr. Giedion spoke of but one aspect of his new book, the "Evolution of the Chair." His last book was "Space, Time and Architecture."

Flats in the City.

THE question of housing in the City of London came recently before the Common Council. The Improvements and Town Planning Committee recommended that no further action should be taken with regard to temporary housing, but that a block of flats, to house approximately 250 families, should be erected within the City in the Bridgewater-square neighbourhood—the site being approximately four acres in extent, the rear of the properties facing Aldersgate-street and the proposed ring road, Fann-street and Golden-lane.

Plan for Worcester.

WORCESTER Reconstruction Committee have approved an outline plan for the development of the city. The plan, which has been prepared by Messrs. A. Minoprio and Hugh Spencely, AA.R.I.B.A., deals primarily with the city's road pattern, and the report points out that there is no north-south road for many miles that in any way rivals in volume the traffic on the road through the centre of the city.

Suggestions are made for the re-zoning of the city within the framework of the suggested new roads, and for the fixing of the population at 75,000. Many of the recommendations are obviously "long-term," but the suggestion that the riverside be developed as an open space is worthy of early consideration.

Architect's Estate.

THE late Mr. George Flint Clarkson, A.R.I.B.A., of Great Ormond-street, W.C., left estate valued at £33,854.

Darlington Borough Engineer to Retire.

MR. E. MINORS, O.B.E., Borough Engineer of Darlington for 22 years, is to retire next March. Mr. Minors was previously assistant surveyor. In June, 1945, he was elected president of the Institution of Municipal and County Engineers.

Professional Announcement.

The practice of the late Ingalton Sanders, F.R.I.B.A., F.S.I., has been acquired by and will be merged in the established practice of WILLIAM BEECH, L.R.I.B.A., F.I.A.S., and will be carried on from his office at the Chamber of Commerce Buildings, Cumberland-place, Southampton. (Telephone: Southampton 2077.)

From *The Builder* of 1846

Saturday, October 24, 1846.

A FEW mornings ago, looking into St. James's Church, Piccadilly, which is now being painted and decorated, we found two young men engaged in the restoration of those extraordinary carvings, probably by Grinling Gibbons, which adorn the altar piece there. Chiefly through the wanton carelessness of preceding painters, these fine works had become greatly dilapidated, and the authorities are to be praised for giving timely attention to them. The carvers in question, by name George Lock and Kent, working on their own judgment and without drawings, were supplying all the missing parts in the character of the original, and were displaying sufficient skill to entitle them, at a time when we are supposed to have few able operatives in this department of art, to considerable commendation.

CONTEMPORARY ARCHITECTURE IN SWEDEN—I

By FRANK T. WINTER, F.R.I.B.A.

FOR twenty years and more the architecture of Sweden has stirred our imagination. As long ago as 1923, at a time when many eyes were turned towards the Continent of Europe, we had begun to hear rumours of what was happening in that country. When the opening of the new exhibition at Gothenburg was announced, expectancy was already in the air, and we wondered what fresh ideas, what flights of fancy, it would reveal.

We remember how eagerly we went down to the galleries of the R.I.B.A. soon afterwards to see how that exhibition at Gothenburg had taken shape. We recall the feeling of wonder when at the same time we were privileged to see and hear something more of the contemporary works of the architects Lallerstedt, Wahlman, Asplund, Bjerke, Ericson and Ahlberg, to name only a few; to admire Ivar Tengbom's impressive interior of the Hogalids Church, destined to lose nothing of its exquisite charm and vigour during the passing of the years; and to visualise the great masterpiece of Ragnar Ostberg, whose Stockholm Town Hall, then nearing completion, was to dominate so proudly the waterfront of that enchanting city.

As might be supposed, this movement, in common with similar movements elsewhere, made its due impact on current trends of thought in this country. At least one good building in London has its prototype in the Sweden of those days; and was it not proclaimed by a certain councillor at the last municipal elections that his Borough could boast a copy of the Town Hall at Stockholm, built by the party whose cause he so ardently pleaded!

But, whatever achievements the preceding decade may have produced, it was the year 1930 that proved to be so significant a landmark in the progress of Swedish architecture, characterised by the light, purposeful designs of E. G. Asplund at the Stockholm Exhibition. Indeed, it may be said with a measure of assurance that the style of modern Swedish architecture emerged in something like maturity at that particular phase of its development.

Hitherto the best works seem to have been stamped with the individual character of their designers, each architect working out his own ideas in his own way. From then onwards the personality of the architect seems to have manifested itself less and less in the form of individual style (though it would be a pity to suggest that personality should ever be submerged, even if that were possible), and to have contributed increasingly to the working out of a common ideal.

This ideal, which closely concerns the life and welfare of the community, must be kept in the forefront of any discussion of the social democracy that is Modern Sweden; and no less of its architecture, which looms so largely in the people's outlook and in the advancement of their standards of living.

Sweden, of course, has maintained her neutrality during the last two world wars, and in fact for the last 130 years. She seems, too, to have escaped to a large extent the unfortunate effects resulting from a period of uncontrolled industrial expansion such as that which England experienced during the nineteenth century. By whatever political road the nation may have travelled, however, it is clear to any visitor to Sweden that a point has now been reached where the elusive art of living is fast becoming a reality. It is reflected in the community life of the housing schemes, be they private, municipal or co-operative; in the great Co-operative Movement itself; and in the attitude of the State to social welfare and housing. It can be seen in many other ways—in a system of education, for example, which sets out to improve the general standard of taste, for architecture and æsthetics form a part of the school curriculum and children grow up with a sense of civic pride and responsibility which is everywhere apparent.

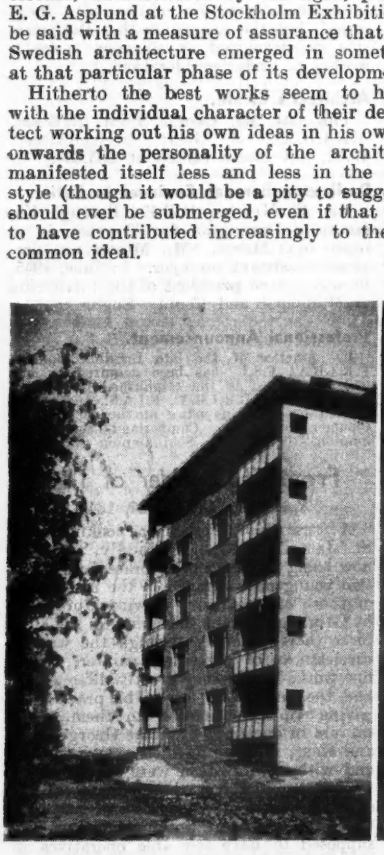
It is against this background that Swedish architecture and housing should be regarded.

PLANNING

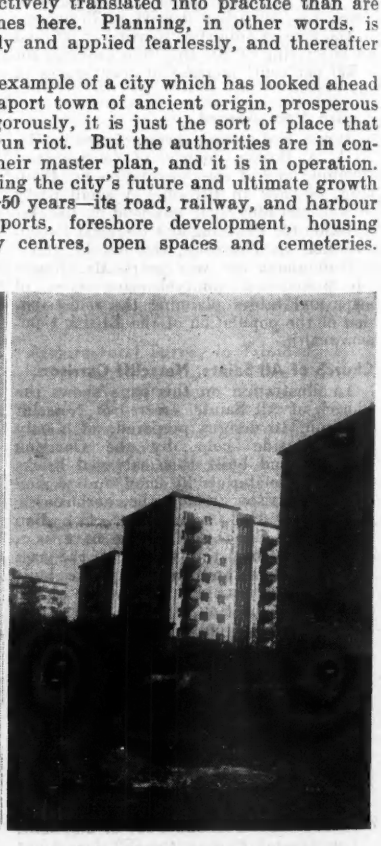
What, then, are the characteristics we can discern in this new architecture that for over a decade has proved itself to be so truthful an expression of Swedish democratic ideals?

Of supreme importance is the question of Planning. It is doubtful whether the principles of town planning are any better understood in Sweden than in this country. The interest that is being taken just now in the redevelopment plans for London and Greater London would seem to support this assumption. The important difference between the two countries, however, is that Swedish planning schemes are so much more effectively translated into practice than are most of the schemes here. Planning, in other words, is taken in hand early and applied fearlessly, and thereafter becomes a reality.

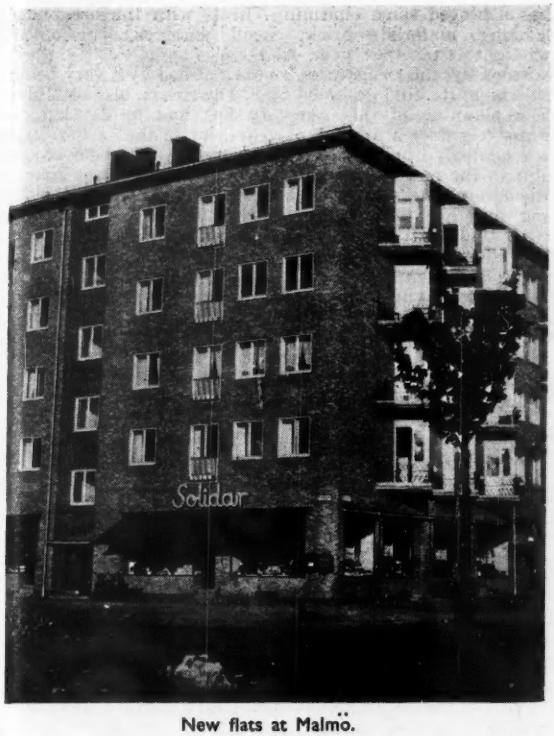
Malmö is a good example of a city which has looked ahead in this way. A seaport town of ancient origin, prosperous and expanding vigorously, it is just the sort of place that could easily have run riot. But the authorities are in control. They have their master plan, and it is in operation. It is a plan governing the city's future and ultimate growth during the next 30-50 years—its road, railway, and harbour improvements, airports, foreshore development, housing estates, community centres, open spaces and cemeteries.



New flats at Gothenburg.



New flats at Stockholm.



New flats at Malmö.

The plan, like most of its kind, is necessarily subject to revision, but the City's wide scope of control in relation to land, and the public's willingness to co-operate, assures its success.

All this is just good, common-sense town-planning, but it is town-planning that works. Architects, and no less the building owners, know what is expected of them, what are their opportunities and what their limitations, with the result that their work falls naturally into place in the general scheme of things.

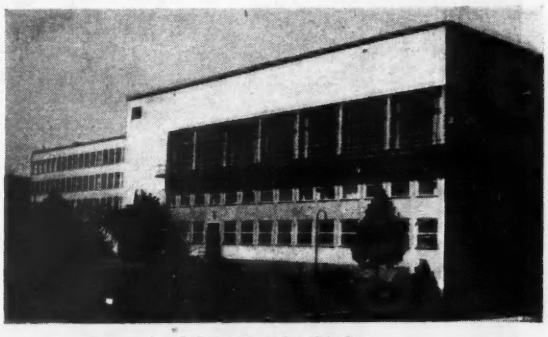
The kinds of building which go to make up a community's needs are much the same in any country, but their relative importance may vary. In Sweden, as might be expected in a highly organised social state, the emphasis is very definitely on Housing. This was made clear in the Exhibition of 1930, and it is much in evidence now, particularly so in the towns, where dwelling in flats seems to be the commonly accepted mode of life. The building of these flats—some of them "high-point" houses, rising to eight storeys or more—is giving a new meaning to the appearance of the towns and is making a valuable contribution to the national architecture.

By virtue of their close relation to housing, some reference ought to be made here to schools, and particularly the nursery schools, which are reaching such a high standard of achievement. Education is fundamental, and architects have given much thought to the satisfying of its needs. Some of the newer schools in Stockholm and elsewhere would repay careful study as models of efficiency and purposeful planning.

SOME NOTABLE BUILDINGS

Many travellers' tales will be told by architects returning this year from Sweden, to describe what is being done in the various branches of social welfare, and in the realms of commerce and industry, entertainment, recreation and sport. (Not that things have changed very much since 1939, for even a neutral country must feel the repercussions of war and its building programme must necessarily suffer in consequence.) Before passing on, however, to our main theme of Housing, we might profitably pause to examine briefly two or three further examples of what can be achieved by an enlightened body of architects working in close collaboration with an enlightened civic authority.

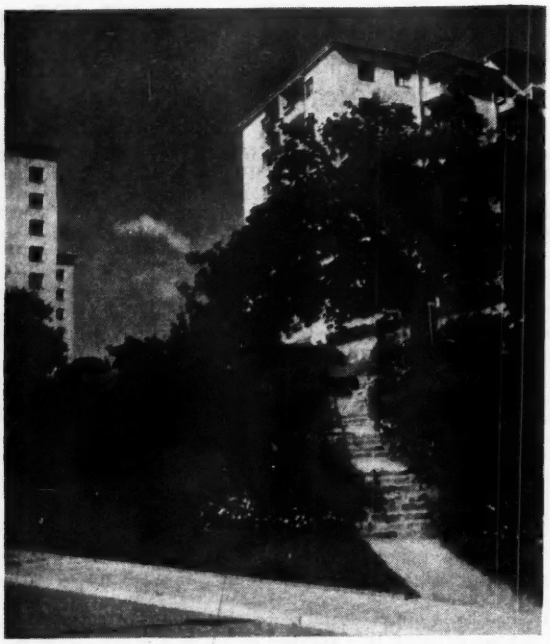
Firstly, the new City Theatre at Malmö. Here is a building which terminates (rather heavily, in the opinion of some) the vista of a main urban thoroughfare, but which on closer inspection is found to be set with delightful freedom amongst trees and grass and a spacious forecourt, and to form part of a larger recreational centre. Inside can be seen a fine combination of boldness, elegance and efficiency. Boldness in the proportions and scale of the foyer with its ample floor spaces and stairs and its wide expanse of window; in the design of the auditorium with its broad projecting stage and proscenium, the feeling of space engendered by the way in which walls and ceiling are treated as a single surface of lightly-toned wood, and the contrast between this and the rich colour of the chairs and stage curtain; elegance in the simple wrought-iron balustrades, the glittering chandeliers, the points of interest created in the foyer by the careful placing of sculpture and exotic plants, and the reticent mural decorations; efficiency, as shown in the planning and equipment of the building, sufficient alone to make stagecraft a pleasure and playgoing a delight. It is a good sight to see an audience of ten or twelve hundred people emerge into the foyer, linger and melt away, without any of the bustle and queueing at cloakrooms that too often mar our visit to the theatre. It is equally good to hear of the lavish dressing-rooms and workrooms, the ample staging and elaborate stage



A School at Stockholm.

The New Post Office Extension, Stockholm.

The Concert Hall, Gothenburg, with the Carl Milles fountain in foreground.



"High-point" flats on island of Reimersholm, Stockholm.

machinery, and the ingenious arrangement whereby the size of the auditorium itself can be adjusted when it is required to seat a smaller number of people.

Another civic building of rare distinction is the Town Hall at Karlskoga, where the architect, Sune Lindström, has achieved some charming effects with the use of contrasting materials—brick, wood shingles, stucco and wrought iron. (See page 425.)

Secondly, the Cemeteries, as exemplified by a very beautiful one of its kind designed by S. Lewerentz, also at Malmö. The planning of this cemetery has had to develop progressively over a number of years, for in the earlier stages a good deal of prejudice had quite naturally to be overcome. But in the end the citizens responded to the lead given to them, and the plan that has resulted, which is developing in other towns and villages too, accords admirably with the spirit of this well-ordered State. Certainly the crematorium chapels at Malmö are full of dramatic beauty such as will ensure for them a very high place in the contemporary architecture of their country, or any other.

Thirdly, the sense of orderliness that can be achieved by proper attention to the smaller things, the incidentals of a plan. This is apparent everywhere—in the design of kiosks, the newer kind of telephone boxes, signs, standards, and street furniture generally. It is apparent in the absence of litter in the streets, or discarded tickets on the floors of trams; and still more so in the absence of any suggestion of blatancy in advertising. Control over advertising, compared with the lack of it in some other countries, is particularly noticeable. Hoardings are almost non-existent, and, in fact, there are very few posters to be seen, apart from the ones neatly set out on the kiosks specially designed for their display. The function of the illuminated sign as a means of advertising is fully recognised, but this is kept in its place, and nowhere can there be seen any evidence of the vulgarity of those importunate devices that have made such a nightmare of many of our own town centres.

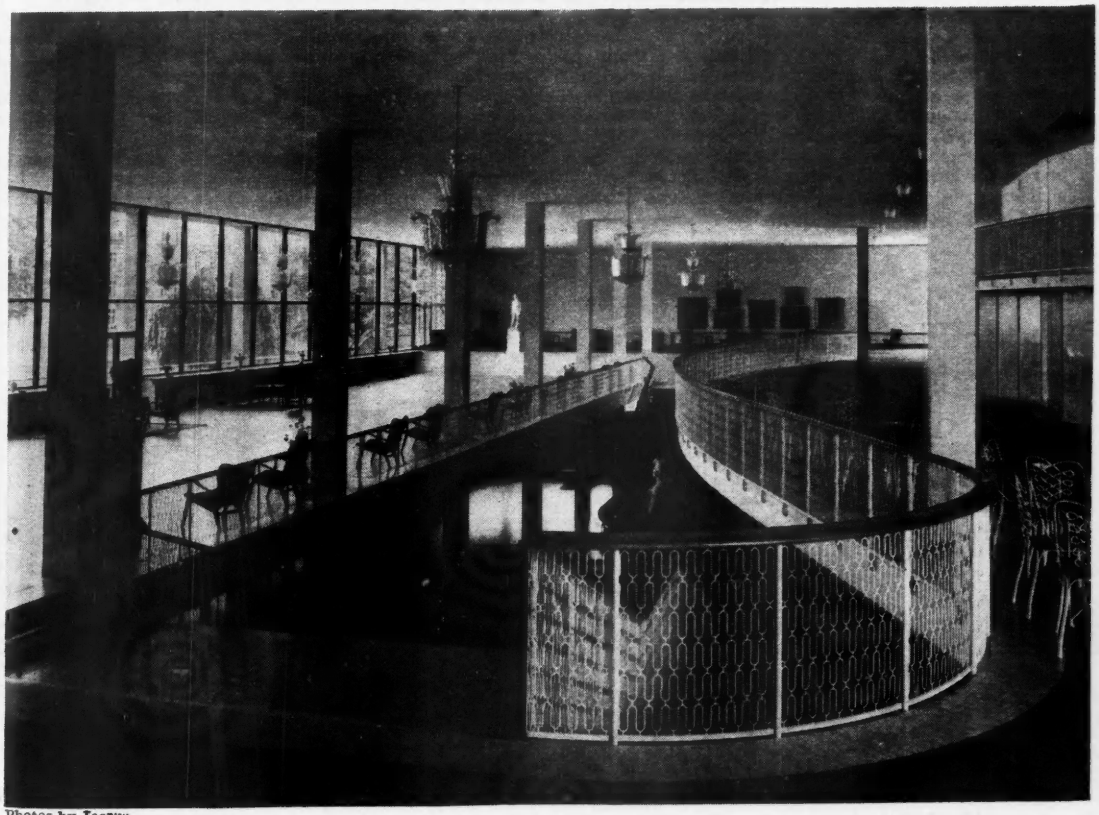
HOUSING—GENERAL TYPES

The recent war had a considerable effect on Sweden's building industry (which appears to have had its lowest level of output in 1941), and on the supply of building materials and labour, necessitating the imposition of a system of licensing which is still in operation. Housing

Photo by Jaerke.

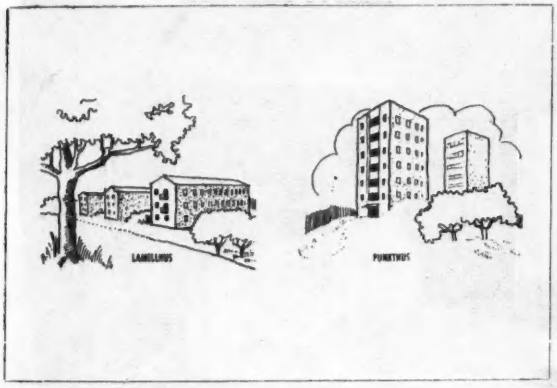
THE NEW CITY THEATRE, MALMÖ: Exterior view.

The Main Auditorium.

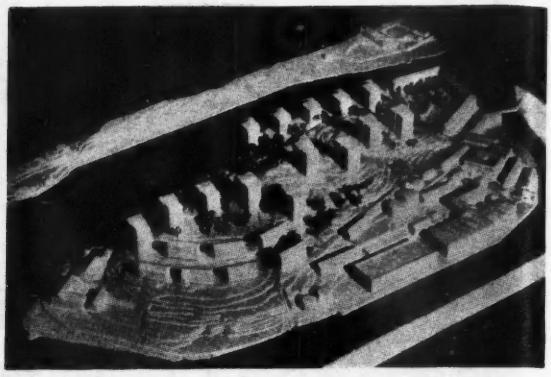


Photos by Jaerke.

THE NEW CITY THEATRE, MALMÖ: The Foyer.



H.S.B. Co-operative Housing, showing (*left*) flats in three-storey blocks and (*right*) the tall buildings.



Photograph of a model of Reimersholm, showing the layout of flats in "high-point" and lamellar formation.

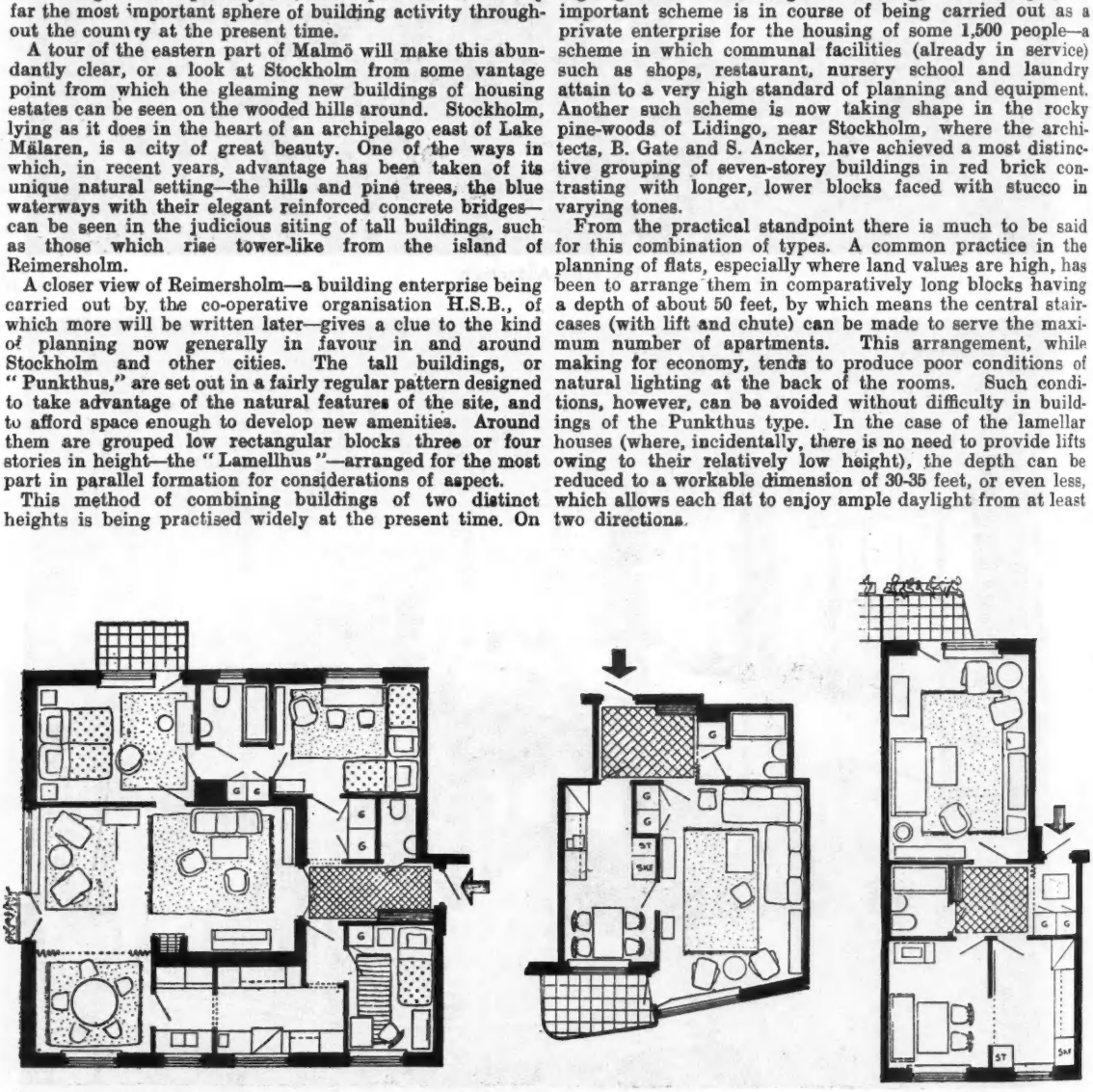
stands high on the priority list, and represents in bulk by far the most important sphere of building activity throughout the country at the present time.

A tour of the eastern part of Malmö will make this abundantly clear, or a look at Stockholm from some vantage point from which the gleaming new buildings of housing estates can be seen on the wooded hills around. Stockholm, lying as it does in the heart of an archipelago east of Lake Mälaren, is a city of great beauty. One of the ways in which, in recent years, advantage has been taken of its unique natural setting—the hills and pine trees, the blue waterways with their elegant reinforced concrete bridges—can be seen in the judicious siting of tall buildings, such as those which rise tower-like from the island of Reimersholm.

A closer view of Reimersholm—a building enterprise being carried out by the co-operative organisation H.S.B., of which more will be written later—gives a clue to the kind of planning now generally in favour in and around Stockholm and other cities. The tall buildings, or "Punkthus," are set out in a fairly regular pattern designed to take advantage of the natural features of the site, and to afford space enough to develop new amenities. Around them are grouped low rectangular blocks three or four stories in height—the "Lamellhus"—arranged for the most part in parallel formation for considerations of aspect.

This method of combining buildings of two distinct heights is being practised widely at the present time. On high ground overlooking Gothenburg, for example, an important scheme is in course of being carried out as a private enterprise for the housing of some 1,500 people—a scheme in which communal facilities (already in service) such as shops, restaurant, nursery school and laundry attain to a very high standard of planning and equipment. Another such scheme is now taking shape in the rocky pine-woods of Lidingo, near Stockholm, where the architects, B. Gate and S. Ancker, have achieved a most distinctive grouping of seven-storey buildings in red brick contrasting with longer, lower blocks faced with stucco in varying tones.

From the practical standpoint there is much to be said for this combination of types. A common practice in the planning of flats, especially where land values are high, has been to arrange them in comparatively long blocks having a depth of about 50 feet, by which means the central staircases (with lift and chute) can be made to serve the maximum number of apartments. This arrangement, while making for economy, tends to produce poor conditions of natural lighting at the back of the rooms. Such conditions, however, can be avoided without difficulty in buildings of the Punkthus type. In the case of the lamellar houses (where, incidentally, there is no need to provide lifts owing to their relatively low height), the depth can be reduced to a workable dimension of 30-35 feet, or even less, which allows each flat to enjoy ample daylight from at least two directions.

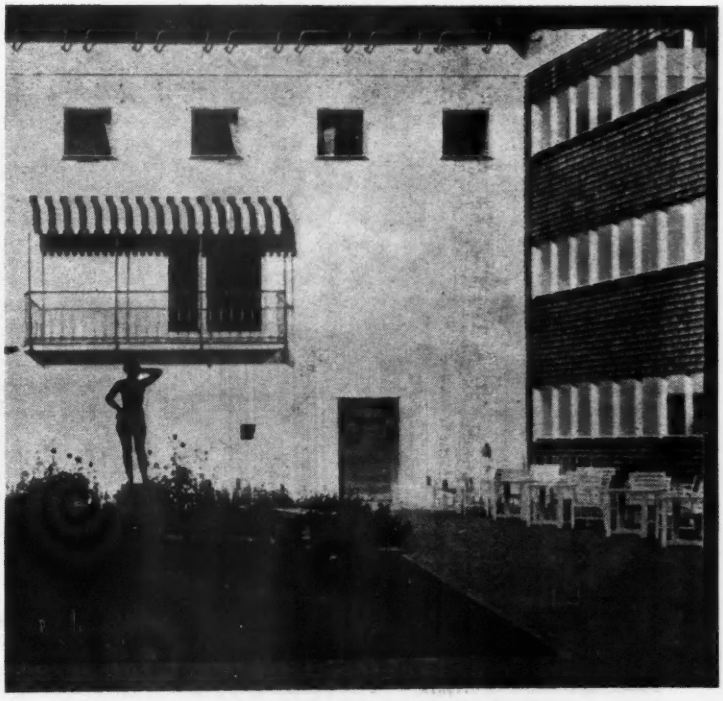


Plans of typical H.S.B. flats of varying size. The placing of bathrooms and lavatories in the central part of a building is quite common in Swedish planning.

PLANNING OF DOMESTIC BUILDINGS

The planning of individual flats is generally good and almost every unit (though this does not apply to many of the municipal tenements) is provided with a balcony of usable size. A feature of the internal arrangement of flats and houses not usually found in this country, but quite common in Sweden, is the placing of bathrooms and lavatories near the centre part of a building, leaving the whole of the outer parts free for living and sleeping rooms. When so placed they have no windows, but are ventilated by air ducts carried up as flues. This method, though not by any means universal, makes for economical planning and orderly elevations, and one gratifying result of it is that no soil or waste pipe is visible on the outside of any new building. The size of bathrooms is reduced to minimum requirements and, unlike current tendencies in this country, no special emphasis is given to their design.

Another important point to observe is the practice of supplementing normal bedroom accommodation by using living-rooms also for sleeping purposes. The wisdom of such a practice is open to question, but the principle is generally accepted, and has been officially recognised hitherto by the authorities. That it is not regarded entirely with equanimity, however, is indicated by suggestions now believed to be before Parliament which aim at increased accommodation in State-aided dwellings according to the number in family.



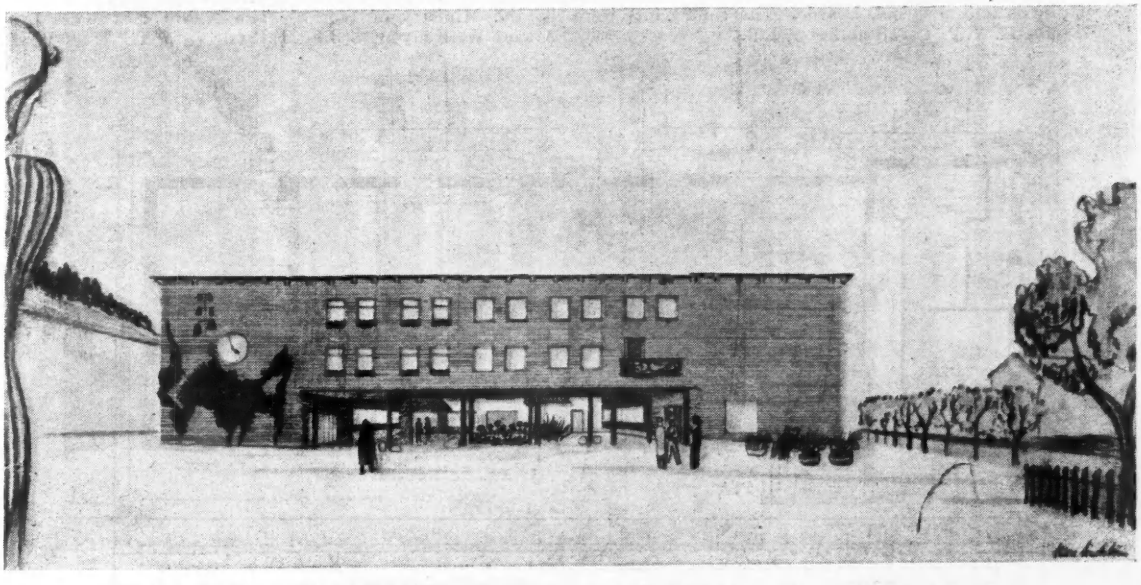
Town Hall, Karlskoga: View from courtyard.

The general use of central heating, even in quite small houses, has resulted in the partial eclipse of the ordinary coal (or wood) fire as an element in the plan. When a fireplace is included, it is usually treated as an incidental rather than a main feature of the room.

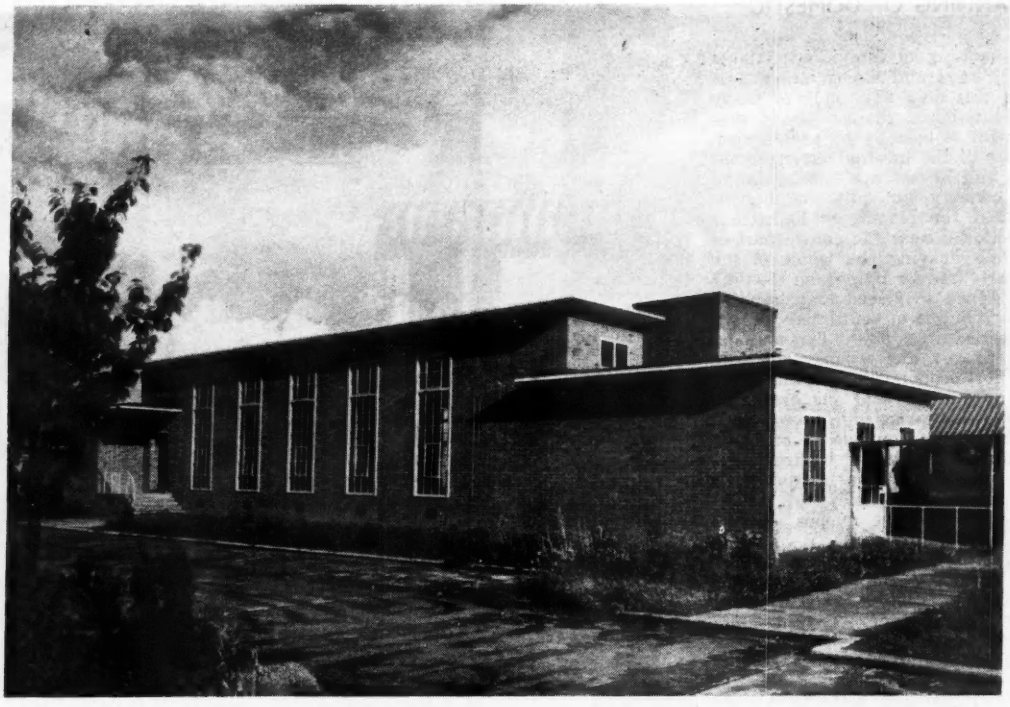
Kitchens generally are well designed and fitted up. The facilities usually provided, in both flats and houses, for laundry and suchlike work to be done elsewhere tend to keep the kitchen comparatively free and tidy, and this is important in view of the common practice of using this apartment for meals, or combining it with dining annexe.

Another important feature affecting utility arrangements in flats is the garbage chute, whose presence on the main staircase landing, often close to the entrance door, is apt at first to strike a note of incongruity. There is no need to fear, however, for the rule that all rubbish must be wrapped in paper before being deposited is well observed. The brightly polished metal door, and the spotlessly clean wall around it, afford yet another tribute to the sense of decency and good manners of the Swedish people.

(To be continued.)



Town Hall, Karlskoga: Main façade, showing entrance colonnade leading to courtyard. SUNE LINDSTRÖM, Architect.



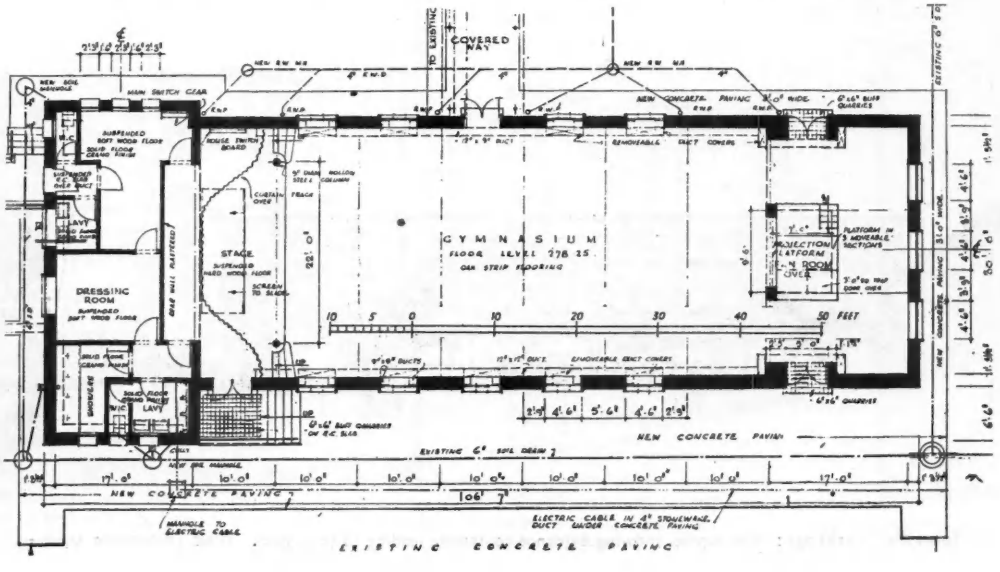
General View.

GYMNASIUM AT STOKE MANDEVILLE HOSPITAL

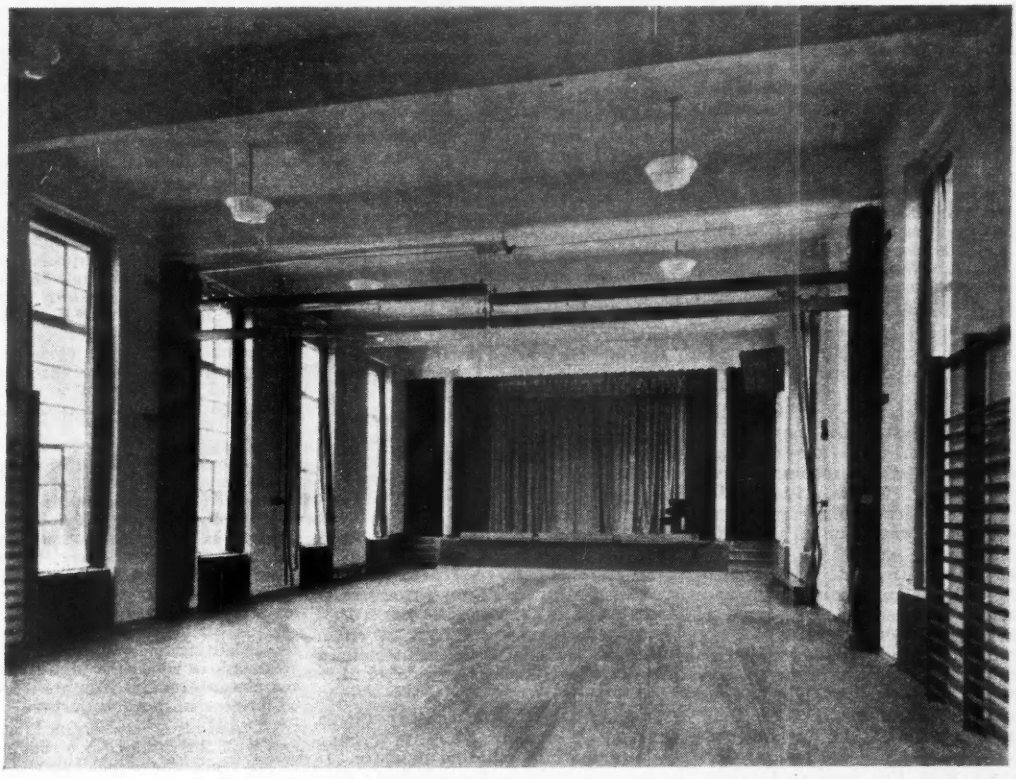
ARTHUR W. KENYON, C.B.E., F.R.I.B.A., M.T.P.I., ARCHITECT

THIS GYMNASIUM AT STOKE MANDEVILLE HOSPITAL, Aylesbury, Bucks, has been built as a permanent building to the existing Pensions Hospital. It has a dual function—as a gymnasium and concert hall. Therefore, a stage and dressing rooms have been provided at one end. The building is in solid brickwork, with facing bricks from the Daneshill Brick Co. The windows are of metal in wooden frames and the ceiling is of reinforced concrete. The flooring is laid with oak boards. The contractors were Messrs. Y. J. Lovell and Son, Ltd.

Sub-contractors were: Steelwork: Matthew T. Shaw and Co., Ltd.; roof asphalting: Ragusa Asphalte Paving Co., Ltd.; roof concreting: Concrete, Ltd.; ironmongery: Nettlefold and Sons, Ltd.; steel windows: Henry Hope and Sons, Ltd.; heating and hot water: Thames Bank Iron Co., Ltd.; power and electricity: General Electrical Maintenance Co., Ltd.; and gymnasium equipment: Spencer Heath and George. Curtains were supplied by the Ministry of Works. The architect is Mr. Arthur W. Kenyon, C.B.E., F.R.I.B.A., M.T.P.I.



Detail of Main Entrance. *Below*: Interior, looking toward Stage.



GYMNASIUM AT STOKE MANDEVILLE HOSPITAL, AYLESBURY, BUCKS

WORD FROM WESTMINSTER

By Derek Walker-Smith, M.P.

BEFORE Monday's debate on housing I got the impression that many Members thought it premature, as there had been a full debate on housing just before the House rose for the long recess. Now that the debate has taken place I must record the opinion that I do not think it has been as valuable as it might have been.

Why not? Principally, I think, for three reasons. First, the only clear justification for having another debate so soon would have been a centring of the debate around new developments in the interval between the two. Instead of this, far too many speeches retrod the old ground which had already been extensively covered. Second, there are far too many "constituency speeches" made in these housing debates. What some may consider good enough for the platform is of no value at all as a contribution to a Parliamentary Housing Debate. Third, there is the insufficient knowledge of the organisation and functioning of the building industry, to which I referred in my review of the July debates. Far too often I get the impression that what is being said in these debates is not what is principally exercising the minds of those with whom I talk in the building industry and in Local Government circles.

* * *

The debate showed very little by way of common ground. For instance, though Mr. Bevan and Mr. Key admitted that there were matters for concern, they rejected the Opposition thesis that progress was slow and unsatisfactory. Captain Crookshank referred to the pathetically small number of houses produced up to the end of August, only 22,015, "one-tenth of what might have been built in two-thirds of the time." Captain Crookshank further stressed the fact that, so far from the housing programme being in full flood, as had been promised, the rate of increase of houses under construction month by month was actually dwindling instead of accelerating. Why were these things so? Was it building labour? Shortage of materials? Bad distribution? Concentration on the use of one chosen instrument? Or a combination of them all?

This was the gist of the inquiry put by the Opposition to the Government. It would have been interesting to have detailed replies. But clearly, as Mr. Bevan did not accept the thesis that the programme was going off the rails, he could not be expected to give the reasons why. In fact, he defended himself with his customary vigour and pugnacious eloquence, and scored a considerable dialectical success.

The broad presentation of his case was that it was necessary in the interests of a just distribution of houses, in accordance with need rather than with means, to make the local authority the instrument of his policy; that the steps that the local authorities could reasonably be expected to take, *e.g.*, site acquisition and putting of contracts out to tender, etc., had been taken; and that the job had been handed over to private enterprise.

* * *

Of course, there was considerable debate as to whether the best use was being made of private enterprise. In this connection, I do make a most earnest appeal to the House of Commons to define its terms before the next debate in which these matters are discussed. At present, Mr. Bevan is using the word indiscriminately to suit the occasion. This makes rational discussion of the problem of where and how to fit private enterprise building into the housing programme very difficult. The term is really used, as readers of *The Builder* are aware, to denote what used to be known as "speculative builders." If the title is reserved for them, and "contract builders" are referred to as such, the House will be one stage nearer to getting to grips realistically with this problem.

* * *

The clash of views on this point really resolved itself into this: Mr. Bevan contended that the overall efficiency of private enterprise is to produce the wrong sort of house for the wrong sort of people. Justice and ethics demanded that preference be given to the building of houses to let by local authorities through contract builders. The Opposition's answer was that the right course was to mobilise everybody who can make any contribution to this housing problem. What mattered was the maximum overall production of houses both to sell and to let. What I should have been interested to hear would have been an informed discussion on whether or not the small and medium private enterprise builder, assuming his readiness to fit in to Mr. Bevan's concept of housing, can in practice be expected to function successfully under a complicated system of competitive tendering and contractual building. For this we must wait for another time.

Great interest naturally attached to what Mr. Bevan said on the materials position. He poured great scorn on his inheritance in this respect; but this provoked a defence by way of an informed reply from Mr. George Hicks. Mr. Bevan stated that he was now able to report that practically all the materials for the temporary houses had been made, except for the aluminium house. In response to what had been done, housing equipment was now being produced in respect of the principal components, such as bricks, tiles, cookers, baths, cast-iron rainwater goods, at the rate of 200,000 houses per year. Full figures on which this is based can be seen in column 1351 of daily Hansard for October 21.

* * *

It was interesting to hear Mr. Bevan referring to the necessity of raising the morale of the building industry. It seems from this as if he perhaps does not, after all, think he is getting the results that he wants. Different theories were put forward in regard to this. Lady Megan Lloyd George, for example, who found the figures in the progress reports neither stimulating nor satisfying, thought that the reason was that the machine was stalling. She suggested administrative change, not a Minister of Housing, but a new Minister of Building, to co-ordinate the activities of the various Ministries and be responsible for planning and priorities. She wittily suggested that he might be called the Minister of Faith and Works. He would certainly need the one and have the other.

A Socialist back bencher, Mr. Corlett, thought that a lot of the difficulty in the housing programme lay in bad liaison, resulting in hostile feelings between local authorities and Whitehall. This could possibly be investigated further with profit. Then there was Colonel Lipton, who belatedly introduced the subject of incentive, and suggested a new wage system in the industry.

* * *

Next time, perhaps, for a change we can start where we left off.

INSTITUTE OF REGISTERED ARCHITECTS

DINNER AND DANCE

THE Institute of Registered Architects held their first post-war dinner and dance at the Dorchester on Saturday, October 19. The President, Mr. W. H. Scanlan, was in the chair.

Proposing the toast of "The Institute of Registered Architects," MR. GEORGE TOMLINSON, Minister of Works, said he knew architects sometimes grumbled about the Government, about restrictions, and were often possessed of a feeling of frustration, but the speed with which the vast arrears of work would be done would depend very largely on their co-operation. This co-operation must be founded on mutual trust—trust between the architectural profession and the Government.

"I have been reading the report of one of my Committees," continued the speaker, "and in that report are set out some of the qualifications which an architect must possess. I confess it surprised me. An architect, in these days, must be something of a financier, something of a lawyer and a man of affairs. He must be a technician of a high order, and, of course, must always act with a high degree of professional integrity. This is an exacting standard, but I know that it is one that is maintained by the members of this Institute."

Replying, THE PRESIDENT said: "We are anxious to use all the resources of nature and our own labour and skill in the service of our fellows, but to-day we are undoubtedly suffering from a feeling of frustration. We in this Institute appreciate that controls are necessary, but it must be confessed that they are at times very irksome. It is not the controls themselves so much as the way in which they are operated that calls for examination. We are indeed anxious to co-operate in the great task to which the Minister referred, and the help of the Institute will always be forthcoming for this purpose.

"The Minister is concerned, as we all are, with the rising costs of building, and in this connection we shall shortly be sending a memorandum to our members on the subject of the certification of accounts in relation to the licensed amount."

CORRESPONDENCE

[Whilst we are glad to publish letters on professional and other matters of interest to our readers, it must be understood that we do not necessarily endorse the remarks of correspondents, who will oblige us if they will express their views as briefly as possible.]

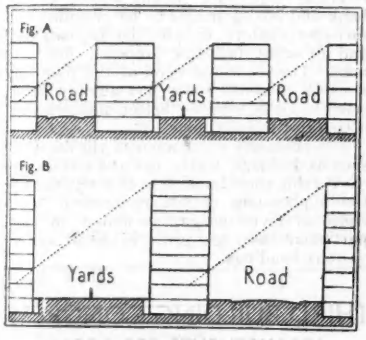
"Limitation of Building Heights."

To the Editor of *The Builder*.

Sir,—May I comment upon a sentence which occurs in the review of the pamphlet, published by the Georgian Group and written by myself, entitled "The Limitation of Building Heights," which appeared in *The Builder*? The sentence reads as follows :—

"The argument that equal accommodation in high blocks compared with lower ones gives more light and air is challenged in a diagram, not quite successfully, as this actually shows that 50 per cent. more habitable rooms get improved light and air in these high blocks than in the lower ones, and the rather too ingenious qualifications employed to indicate equality are not altogether convincing."

The accompanying diagram shows that in respect of the angle of sunlight entering the rooms *above* the first floors of the buildings, the two contrasted types of development, Figs. A and B, are on terms of equality inasmuch as the proportion of width of street to height of buildings on either side of it is the same in each case. On the assumption that in both the street sections represented the three lower floors are for the most part occupied by shops and the upper floors allocated to offices, the diagram shows that there will be nine upper floors in the layout of the lower



buildings as compared to twelve of such floors in that of the taller buildings. Thus the excess proportion of these well-lit office floors in the case of the taller buildings is not 50 per cent., as alleged by your reviewer, but only 33 per cent. On the other hand, the layout Fig. A has the advantage that it provides 50 per cent. more floor space on the three lower floors, especially suitable for highly rented premises such as shops, banks and insurance offices, than does that shown in Fig. B and also 50 per cent. more street frontage.

If we also bear in mind the following two facts, namely, that the cost per foot cube of erecting the taller buildings would be considerably more than that of the lower ones, and that about a third of the office floors in the layout of taller buildings would probably be unlettable because they are in excess of requirements, it becomes obvious that the type of layout represented in Fig. A is a far better commercial speculation than that represented in Fig. B, while in respect of sunlight the two sections are on terms of equality, and the intensity of development, i.e., the amount of floor space per acre of the area developed, is the same in each case.

In the business quarters of most towns the amount of floor space required for offices is less than half that needed for the type of business which can only be conducted if there is immediate access from ground level. If the upper floors of the layout shown in Fig. B are to be fully occupied, part of them would need to be let out as tenements, with the result that the health and well-being of a section of the population would be sacrificed just because certain town planners had made a slip in their arithmetic!

The section, Fig. B, showing tall commercial structures which might overbear the public buildings in a town and thus provide a conspicuous example of bad manners in architecture, violates a principle which appears to be acknowledged by your reviewer. Section A, which is an approximation to the scale and proportion of many of the streets built by our Georgian forefathers, is not open to this criticism, which proves that the people contemptuously described by Napoleon as "a nation of shopkeepers" had not only practical sense but architectural taste as well. While the buildings they left behind them may be worthy of preservation on account of their usefulness and beauty, it is here submitted that the *principal* reason why we should respect these buildings is that they afford much-needed lessons for the future; they exemplify certain elements of logic relating to urban design which planners of to-day are in danger of neglecting.

A. Trystan Edwards.

Wages and Production.

To the Editor of *The Builder*.

Sir,—Your leading article on this subject [*The Builder*, October 11] calls attention to a variety of questions which are at present facing the building industry. Some in high positions will no doubt seek to comment on it.

My particular interest is your reference to the question of incentives, for I had the honour of bringing to your notice—and, if my memory be not at fault, you commented very favourably on it—a scheme by which an incentive system would very easily be introduced into the building industry.

Since the outline of that scheme appeared in *The Builder* discussion of it has gone on outside, but it has been represented to me that one reason why it has not yet been adopted is that it is too "complicated," and the suggestion was made that if I could reduce it to the compass of a single postcard it might have better chance of acceptance.

Sir, I can do better. Here, following your own pronouncement on the question of incentives, is the scheme on half a postcard.

"Operation X."

1.—A rate book of "standard man-hour components" is agreed in the industry, and bills of quantities are prepared with each item given its particular man-hour value.

2.—When the job is completed, the total amount of wages paid is certified by an accountant. The total number of man-hours required is shown by the final bill of quantities, and is certified by the quantity surveyor.

3.—The saving, if any, is the difference between these two figures. This is divided into three equal portions—one going to the building owner, one to the contractor, and one to the operatives employed on the job. Calculation is then made of the percentage the operatives' part of the saving is of the total of wages paid, and a dividend is paid to each individual operative on the total of wages paid to him whilst engaged on the job.

Having given the scheme in this tabloid form, may I add one or two comments.

First, no extra work is required of contractors' staffs except that of distributing the dividend.

Second, I have heard it said that our present bills of quantities do not differentiate between work of a similar nature but in different conditions (such as, say, brickwork on ground floor and on the sixth storey being all included in one item), but surely it would be a decided improvement if this differentiation were made. Apart from anything else, it would greatly assist in achieving intelligent (and intelligible) estimating.

And this has been put forward as a reason why "Operation X" is impracticable! But surely this does not give the quantity surveyors' profession much credit for intelligence, and I am quite sure that they must realise that unless they serve their only purpose, viz., to help the building industry to run efficiently, they will be outmoded.

In this country we possess a body of skilled professional men who are already engaged in the proper measurement of work done which has to be paid for by the building owner, and who are trusted by both the buyer and seller. Why go further to look for a means of applying measurement?

Next, I have heard it said that it would take years to get such a scheme as "Operation X" working. I entirely disagree, and I am sure that if only thinking and doing were as attractive to some as is talking, it would be under way in thirty days and working in sixty. To accomplish this ideal of "working in sixty days" I believe the following action should be taken :—

A series of working committees should be formed, one committee for each trade in the industry. Each of these committees to consist of one representative of the National Federation of Building Trades Operatives, one representative of the National Federation of Building Trades Employers, and two professional quantity surveyors. Each committee to estimate an *approximate* pre-war man-hour component for each operation in the trade concerned. Having agreed approximate average figures of pre-war standard of output, they then agree a basic figure for each at a point in excess of this average (allowing, say, an extra time allowance of 50 per cent.). These basic figures then to become in each case those to be printed in the book of "Standard Man-hour Components."

These rate books then to be circulated to all practising quantity surveyors, and all jobs on which incentives are permitted to have the man-hour components entered against each and every item and with a total at the summary before issue to tenderers.

A number of quantity surveyors throughout the country could be licensed to act locally as arbitrators; and in cases, if any, where there may be too great a deviation from the average of site difficulties, they should have power to award a supplementary percentage to apply to the man-hour components throughout the job as a whole.

May I add that before I wrote last year propounding "Operation X," I discussed the scheme with certain of my friends. Their comment was: "It is an excellent scheme, but you will never get the big firms to agree to accept a basis to be applied by all and everyone in the industry. They will want to be able to vary the basis from time to time and place to place to suit their own individual interests, and so to use any scheme as a means of attracting labour when it is in short supply

or putting the screw on wherever there may be unemployment."

I believe those friends were too cynical, but time will show.

When I first brought "Operation X" to your notice my official position with the London Master Builders' Association seemed to preclude me from giving my name. Happily that consideration no longer applies, so I sign myself openly

D. C. BURGESS.

London, S.W.1.

An Overcrowded Profession?

TO THE EDITOR OF *The Builder*.

SIR,—In your note (October 11 issue) on the emergency extension of the A.A. School of Architecture, attention is focused on the large number of ex-Service men and women completing their training. This, as your readers are probably aware, is happening at other schools—besides an increased intake from normal sources.

In the same issue there are 28 advertisements for architects or assistant architects under local authorities, about a dozen advertisements for assistants in commercial undertakings, of which two are in builders' offices—one insisting on R.I.B.A. qualification—and about half-a-dozen which appear to have been inserted by private practitioners.

Ought not a brake to be put on the wholesale outpouring of architectural assistants, not one in 50 of whom can ever aspire to private practice or the equivalent in other branches, in order to prevent in a few years' time the inevitable respectable (?) poverty to which so many will be condemned?

"CONCERNED."

Housing Costs.

TO THE EDITOR OF *The Builder*.

SIR,—A comparison of the prices of housing schemes as published weekly in *The Builder* is interesting. Taking the average over the whole country for schemes of from six to 284 houses during the past 15 weeks, excluding the London area, the figure is £1,189 per house. This is for the building, house drains and house paths only, and does not include sewers, roads, public paths, tree planting, legal or architectural costs.

The weekly figures have varied between £1,154 and £1,226. Temporary and prefabricated housing schemes are not included, nor are schemes which, presumably because they are in backward rural areas, average out at over £1,407.

Fees will range from £35-£40; land will be £15-£50, and site preparation £90-£120. It is difficult, therefore, to see how the average job can be done for less than £1,365. How, therefore, can the Minister justify his ceiling of £1,200 (outside London) for houses built by private enterprise? The inference is only too obvious.

J. H. R. FREEBORN,
M.A., L.R.I.B.A., F.S.I.
(Chartered Architect).

London, W.1.

Delay in W.D. Inspection.

TO THE EDITOR OF *The Builder*.

SIR,—It has been brought to our notice by the War Damage Commission that where it is necessary for their surveyor to make an inspection of a property before proceeding with the work, in order to ascertain the extent to which the War Damage Commission would be willing to commit themselves, in many cases it requires up to three months before an inspector is available for this purpose.

Considering the hue and cry with regard to the provision of housing, this appears to us a shocking state of affairs, especially in view of the fact that, as we have found from our own experience, considerable further damage is caused through the weather during the time the War Damage Commission take to approve a claim and the delay in the carrying out of the work.

In our opinion a simple remedy would be (especially in view of the fact that so few architects are able fully to carry on their practices) to employ local professional men to assist in making the necessary inspection, and so make houses habitable in a much shorter period of time.

We trust that you will bring this suggestion to the notice of the War Damage Commission and give this matter as much publicity as possible.

MORRIS AND RILEY.

Liverpool.

The late W. T. Creswell, K.C.

TO THE EDITOR OF *The Builder*.

SIR,—I have heard with regret the passing of Mr. Creswell, K.C., and as President of the Institute of Quantity Surveyors would desire to express the sympathy of the members of our Institute to the relatives of one whose geniality and lectures given at various of our branches on legal matters relating to quantity surveyors have been very much appreciated. His death will be felt by many readers of *The Builder*.

A. C. REMNANT, F.I.Q.S.

Headcorn, Kent.

THE DEVELOPMENT OF WINDSOR

As it is bounded by the River Thames on the north and the Great Park around the castle on the east and south, the Royal Borough of Windsor can only expand westward to embrace the villages of Clewer and Dedworth, and thus any planning scheme, such as the one now approved by the Council,* can only deal with this area. Unfortunately for the town planner, the area in question is already occupied to a large extent by a number of scattered building developments comprising schools and groups of residences, so that much of the scheme resolves itself in the endeavour to tie these together in as orderly a manner as possible.

Another difficulty arises from the fact that the necessary Windsor and Eton relief Road, as planned by the counties of Bucks and Berks on lines laid down by the East Berks Regional Planning Committee to the west of the Great Western Railway branch line to Windsor, intersects the area from north to south, and neither the line laid down for this nor the substituted one offered in the scheme seems helpful towards a satisfactory development in detail. It looks as if it would be better to take this road further westward either west or east of the racecourse and through Dedworth towards Ascot, with a spur road to serve the western part of Windsor near the proposed commercial centre. Such a route would facilitate access to the racecourse and would interfere less with the attractive development proposed for the river frontage around Clewer.

It is indicated that the development should extend southwards as far as the proposed arterial route from old Windsor to Maidenhead, and on this side an area has been allocated to light industry: further west other industries might find a place if these were found desirable, but it is recognised that Windsor is, in the main, a residential and educational borough. Sites are reserved in the plan for a new County College (24 acres), a new Secondary School (17 acres), two new Primary Schools and three Nursery Schools. The estimated present population is 3,805, and the plan gives accommodation for an additional 6,378 persons. Ample open space is provided, apart from school playgrounds, in the form of recreation grounds and allotments. Windsor is fortunate in having the extensive areas of the Great Park and Windsor Forest to the south and east, but it is also important to preserve and improve the amenities provided by the river frontage to the north, where it is proposed to acquire the land here, including Clewer Park and Clewer Mead, and to arrange for boating and bathing facilities, both winter and summer, together with halls for general entertainment, such as dancing and music, and for proper catering. Wide lawns would sweep down to the river and pleasure boats and steamers can tie up where Clewer Reach widens to a pool at Lower Hope, Clewer Village, with its beautiful church and pleasant surroundings, makes a suitable focus for the whole of this riverside area, and great care must be observed in any additions or alterations to the village.

The existence of the racecourse and its heavy traffic on race days demands that further consideration should be given to this as a factor in the plan. As the course lies on the river, preventing public access to a long and beautiful section of the river bank, it is suggested that it would be well to consider the possibility of acquiring the course and running it as a municipal enterprise, following precedents at Doncaster and Brighton. By this means the Council could preserve the riverside amenities, permit access to its bank and enable means to be provided for race-day visitors to use the recreational and catering facilities proposed for this area. The reconsideration of the plan for a north to south route has already been referred to as offering better independent access to the racecourse.

The necessary expansions of the services such as drainage, water, gas and electricity receive due consideration in this report and the applications of the recognised principles of civic design, as suited to this particular case, are given in detail under various headings.

H. V. L.

* Windsor. Development Plan for Dedworth-Clewer. 1946. Robert Hening, M.B.E., Anthony M. Chitty, M.A., F.R.I.B.A., A.M.T.P.I., Town Planning Consultants.

THIRD BUILDING CONGRESS

ARRANGEMENTS FOR LOCAL AUTHORITIES

The Ministry of Health, the Scottish Home Department and the Government of Northern Ireland (Ministry of Health and Local Government) have agreed to sanction the payment of reasonable expenses of delegates representing local authorities attending the Building Congress organised by the Building Industries National Council to be held at the Central Hall, Westminster, on November 19 and 20.

Local authorities are being called upon to play an increasingly important part in shaping the building development of their administrative areas, and the appropriate Minister of the Crown charged with the central administration of this development will open sessions of the Congress. Every opportunity will be afforded for delegates to express their views. The Parliamentary Secretary to the Ministry of Works, Mr. Harold Wilson, O.B.E., M.P., has consented to sum up the proceedings on the second day of the Congress.

Early application should be made by delegates, as the accommodation has necessarily to be limited to approximately 1,500. Tickets, price £1 1s., to include buffet luncheon on both days, can be obtained from the offices of the Council at 11, Weymouth-street, London, W.1.

DOMESTIC HEATING IN AMERICA

BUILDING AND FUEL RESEARCH REPORT

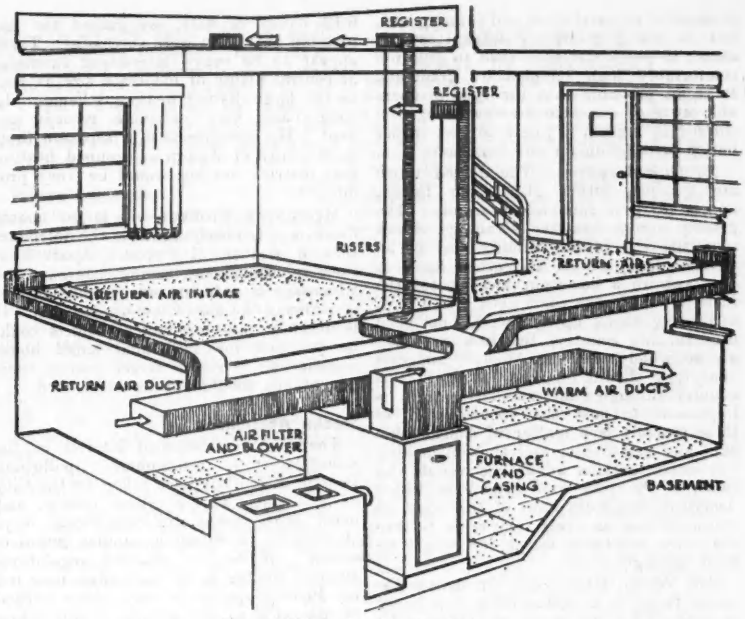
THE Directors of Building Research and Fuel Research have published a report, "Domestic Heating in America." The report is a study of heating, cooking and hot water supply in small houses in the U.S.A. and Canada by a joint party from the Ministry of Fuel and Power (Mr. J. C. Pritchard) and the Building Research Station (Mr. C. C. Handisyde) and Fuel Research Station (Mr. R. H. Rowse) of the Department of Scientific and Industrial Research. The report is published by H.M. Stationery Office, price 3s. (by post 3s. 4d.). The party visited a large number of cities from Boston on the Atlantic coast to Seattle on the Pacific coast and from Montreal in Canada to Charleston (S.C.) in the South of the U.S.A. They met architects, heating engineers, public utility officials, appliance manufacturers, research workers, physiologists and housing managers. The party made a special point of visiting houses in almost every town to discuss heating, water heating and cooking appliances and heating systems with housewives.

Following are their conclusions :—

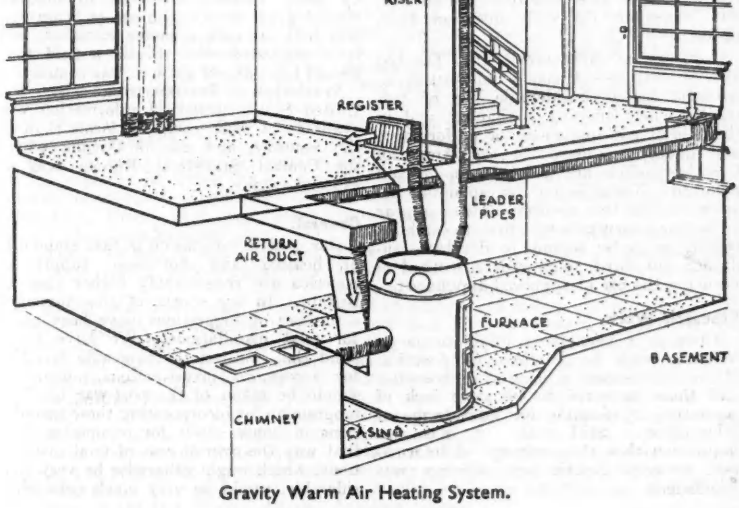
We returned from our tour with two major impressions. One was of the great attention given in America to domestic heating problems and their great willingness to share their experience with ours. The other was of the divergences between heating practice in America and Britain, which in the main were that heating of the entire house for 24 hours a day is taken for granted in America; that high temperature radiant heating either by open fire or other means is practically never used on low income group housing; and that ventilation by the introduction of fresh air from outside the house is very much less. In a measure doubtless these divergences are the natural and inevitable consequence of the different climatic conditions in the two countries, but it may be taken as certain that there are lessons to be learnt from the more intensive study of the heating of dwellings which have necessarily had to be made in the severe conditions of America which would find useful application in this country. In the belief that it was the intention that any ideas that emerged from our tour should be followed up in this country by investigation and trial, and in the confidence that the fullest possible co-operation would be accorded by the American authorities, we record in this chapter not only a summary of our conclusions, but also points that seem to merit consideration for action in one direction or another.

Full house heating appears to have been achieved with comparatively low fuel consumption in America. In this country general ideas seem to stop short at providing a certain amount of "background" heating plus topping-up the room as required by high temperature radiant heat from a separate appliance. This is largely as a result of a desire for economy. American experience suggests that this should be considered as an interim expedient only.

It has been noted that in America ventilation by the introduction of fresh air from outside the house is very much less than here. If, in fact, American standards are adequate, their adoption in this country would lead to considerable economies.



Forced Warm Air Heating System.



Gravity Warm Air Heating System.

House Design in Relation to Heating.

The modern house in America is more open in its planning than the pre-war British house. There is clearly very close relationship between the type of house plan and the method of heating and it is important that this relationship should be kept in mind. The open plan might well be one of the reasons why the American standards of ventilation are found to be satisfactory. There is already a tendency towards this type of planning in recent examples of house design in Britain. This encourages the idea that a number of such houses should be built and equipped with the various kinds of heating common in America, and investigated and lived in to gain direct experience in this country.

The widespread use of non-habitable basements in American houses is noteworthy. These basements provide a considerable amount of useful additional space besides being the most convenient location for the heating appliance. The practice of providing basements has largely disappeared in this country mainly, we believe, on the question of cost—chiefly the cost of excavation. Recent improvements in methods of mechanical excavation suggest that the whole question might well be reconsidered although the situation may be less favourable to basements here than in America, where deep foundations are necessary in any case.

Types of Warm Air Heating Apparatus.

(*a*) *Pipeless systems.*—Warm air heating installations are very common. Space heaters and pipeless warm air furnaces are

economical in installation and running cost, but do not give entirely satisfactory results; in particular they tend to give uncomfortably high temperature gradients. It seems probable that the type of openable stove or closeable fire now being considered in Britain is likely to give rather better satisfaction for our conditions.

(*b*) *Ducted systems.*—The ducted warm air systems, either gravity or forced, appear to give satisfactory results. The gravity system has the advantage of not requiring the initial running cost of an electric fan but on the other hand it does require a basement location for the furnace. Although these both give a form of heating which, up to now, has not been used in this country, the fact that they are so widely used in America suggests that they should be investigated in this country through trial installations. It is important to note that good design of these systems is a matter of considerable skill and experience, and that in making any investigations advantage should be taken of the very wide experience which American engineers have of this kind of work. There is every reason to believe that any assistance asked for would be most willingly given.

Hot Water Radiators: In urban districts there is a considerable experience of heating by hot water radiators. The majority of installations in low income dwellings at the present time are in flats, but the use of this type of heating in individual housing is increasing and it is undoubtedly one of the methods which people would most like to have. Experiments are in progress with new types of radiator, in particular with skirting board types in either cast iron or pressed steel. While it may be that initial costs of heating individual houses in this way may be somewhat high by pre-war standards, it offers such advantages as to suggest that some small house installations should be made, partly with a view to obtaining user reactions to this method of heating applied to small houses and partly in order to endeavour to work out an economical system suitable for production and installation in quantity for houses of similar plan.

Low Temperature Radiant Heating.—The various methods of low temperature radiant heating described in this Report have certain notable advantages. Considerable developments are taking place in America. Britain is regarded as the home of panel heating. American development suggests that we should follow up our pioneer efforts with this method by further experimental development of the system for application to small houses. Warm air panel heating methods seem particularly worthy of investigation.

Other Types of Installations and Appliances.—Many new ideas were being tried in America. As some of these, when fully developed, may prove to be of the utmost importance, close touch should be kept with these developments with a view to details being obtained and experimental models made or imported for trial in this country when the time seems ripe. This seems particularly to apply to the new type of anthracite burner, to the chimney furnace and to the airplane type heaters.

District Heating.—Although a study of district heating was outside our terms of reference, we saw a number of examples of terraces or small groups of houses heated from central plants. On the whole we received the impression that such schemes were unlikely to be successful unless they could be almost entirely automatic. Of the few larger schemes we saw, such as a central plant dealing with 6-12 blocks of flats, we gained the impression that they were successful. There appear to be many interesting examples of central plants of moderate size as well as the large district heating schemes. In some cases very complete records are kept. We consider that a separate first-hand study of American grouped heating and district heating would be very productive.

Mechanical Stokers.—In larger houses there is a tendency towards the introduction of mechanical stokers. Apart from their value in labour saving they have the advantage of reducing smoke emission and of allowing the use of low-quality coal. It is unlikely that mechanical stokers could be justified for individual small house installations, but for larger houses their advantages should not be overlooked.

Smoke Abatement.

There is a widespread interest in the reduction of atmospheric pollution. Drastic action has been taken by the City of St. Louis, with excellent results, and many other towns are considering ways and means of obtaining similar improvements. While the detailed regulations adopted by St. Louis authorities may not be directly applicable here, their method of approach to the subject is interesting and worth keeping in mind in connection with efforts here to deal with the smoke problem.

Hot Water.—In all new dwellings there is an adequate system of hot-water supply. In some cases, usually in flats, this comes from a central plant. In an appreciable number of new estates where individual houses have their own water-heating systems there is an arrangement for an unlimited supply of fuel for water-heating purposes in return for a fixed additional charge on the rent. This arrangement seems to have much to commend it, and the resultant increase in water usage does not seem to be unreasonable when other savings have been taken into consideration. American experience encourages the idea that the system might be tried out on an experimental basis in British housing estates.

Use of External Meters.—In many districts of America it is compulsory to fix electricity meters on the outside of houses to facilitate reading by supply company officials. The system has obvious attractions. In cases where a prepayment meter is required it should be quite possible to arrange the meter in a wall recess, so that it is read from the outside, but accessible for coin insertion from inside.

Control of Appliances and Testing and Standards.—Housing authorities in America make considerable use of test results when choosing appliances, and in the field of gas appliances the performance and quality standards of the American Gas Association are widely accepted and enforced. There is no corresponding development in this country. There appear to be three essential steps: first, to establish testing methods; second, to develop standards; and third, to provide a method of ensuring the use of approved appliances.

Research Work.

There is a very large total volume of research work in progress in America. Much of this work is done at Universities and there appeared to be some lack of a central organisation for interchange of information. Still more, it was our impression that the exchange of information between Britain and America was insufficient.

In general, it seems there is a case for encouraging more research in this country in heating methods rather than in combustion.

Heat Insulation.—The value of heat insulation is well recognised by both public and technicians, and in the colder districts heat insulation is always used. In climates similar to our own, standards of insulation are not at present appreciably higher than those of our own pre-war houses. Double glazing in its various forms is not yet common in the smallest houses, except in the very cold districts, but its use is apparently increasing. The weather strip for draught exclusion is fairly common, but by no means universal practice.

There is a very widespread appreciation of the value of insulation from the point of view of increased comfort, in addition to anything it may do to reduce fuel consumption.

American experience confirms the increasing emphasis being laid in the country on the importance of adequate thermal insulation in the structure of buildings which require heating.

Vapour Barriers.—We were not able to make a detailed study of vapour barriers, but it is clear that the need for these is well recognised in the colder districts, and that with the increasing tendency towards tighter building construction they are becoming increasingly important. It may be difficult to translate American experience to British conditions, but the subject appears to be one which should be examined in connection with the newer forms of hollow wall construction such as are now being accepted.

Chimneys.—There appear to be considerable advantages in the method of chimney construction now generally adopted, wherein the brickwork is lined with glazed tile units. This form of construction may show to particular advantage with the increasing use of slow combustion appliances, and merits study from this standpoint. Consideration should be given to the advantages which might be obtained by adopting this as common practice in Britain. Also it would be valuable to erect and keep under observation piped flues of the kinds described in Chapter 12 of this Report.

Manufacture of Briquette Fuel.—A considerable amount of fuel in the form of manufactured briquette is used. Briquettes are made in two ways; first by using low-grade material, and second by using selected materials to produce special grade fuels. The use of briquettes will help to reduce smoke emission, and it is suggested that this is a field that should be explored anew in this country.

Statistical Information.—In the United States statistical information was available in more complete forms than in this country, and also in Canada where the Central Statistical Bureau was of especial value.

General.

Our general conclusion is that standards of heating and hot-water supply in America are considerably higher than in Britain. In the course of this summary a number of suggestions have been made for trial installations. We have it in mind that, subject to reasonable facilities for access for investigations, advantage should be taken of the post-war building programme for incorporating these installations in houses built for occupation. In that way the overall cost of trial installations, which might otherwise be very considerable, would be very much reduced.

PROBLEMS BEFORE THE BUILDING INDUSTRY

MR. HAROLD WILSON'S SPEECH TO SOUTHERN COUNTIES FEDERATION

"THE two main problems before the building industry to-day are, one, the planning of the optimum resources of the country while maintaining liberty, and, two, the securing of production without recourse to the unemployment pool. Both will require the tripartite co-operation of the Government and both sides of the industry for their solution." MR. HAROLD WILSON, Parliamentary Secretary to the Ministry of Works, made this point in the course of replying to the toast of "His Majesty's Ministers," proposed by Mr. L. A. Walden (President) at a luncheon held at the Connaught Rooms on October 17, in connection with the autumn general meeting of the Southern Counties Federation of Building Trades Employers.

During the lunch it was stated that Mr. Wilson is to be seconded from the Ministry for some weeks to undertake a mission to Washington in connection with world food supplies.

THE PRESIDENT, in proposing the toast, said that builders welcomed the Minister of Health's "finish the houses" campaign, and were confident that, given the materials, the job could be done, but naturally in giving that assurance they relied on the Minister's promises that the materials needed had been or would be produced.

"It appears to be necessary that one aspect of the housing position should be made clear to the public as official returns are given in the form of a comparison of the number of houses built by local authorities and those built by private enterprise; actually, of course, practically all houses being erected at the present time are built by private firms, for the private builder is the instrument by which the local authority builds." The President then mentioned that over 450 members of the Southern Counties Federation had undertaken to build approximately 9,500 traditional houses for the 204 local authorities in their region. The Federation welcomed, too, the Regional Building and Civil Engineering Joint Committees, two of which functioned within their area, but their satisfaction was considerably reduced when they learned that the Government had had second thoughts and had decided, against their advice, to by-pass the Committee as regards temporary housing sites. "We want to see the temporary housing programme completed quickly, but feel that this objective could have been achieved by speeding up instead of by-passing the machine." The Zonal Conferences recently undertaken by the Ministry of Works would, he hoped, in themselves correct what really amounted to too great a volume of work being allowed and quite beyond the capacity of either the labour or materials resources to undertake. At the same time, there were too many officials on those conferences, and the matters under discussion would be expedited if more advice were sought from the builders.

"The special National Joint Production Committee, with its Regional Committees set up under the agreement arrived at by the National Joint Council on December 11 last have now been set up and are getting down to their job. The Production Officers have been appointed and, so far as this region is concerned, are commencing their duties. We shall do everything we can to make their work effective. This machinery was set up as part of the last Wages Agreement. We are now faced with an application for another increase. This matter is *sub judice* at the moment. I will say no more other than that I agree with the view recently expressed by Mr. Aneurin Bevan that the cost of building must not go any higher. I would even go further, and say it must come down."

Mr. Wilson's Speech.

Responding to the toast, THE PARLIAMENTARY SECRETARY defended the system of controls, without which, he said, the industry might have had very much more chaos in the past 15 months. He personally did not like controls, but without them the priority building of houses would be far less; it was noticeable that in U.S.A. by the removal of controls (which they were now trying to re-impose) they were in great difficulties over housing. The Ministry's object had consistently been to make controls more simple to operate.

On the subject of materials, the problem of the production of bricks had been broken; by September the production was 3½ times more than in September, 1945, and had doubled since March last. They were now turning their attention to the iron foundry, where labour shortage was again dominating the situation. He admitted that asbestos, cement and plaster-board were still producing headaches, and the metal-window problem was as far as ever from solution.

"We all want to see the temporary housing programme completed and out of the way," said Mr. Wilson, "so that we can get on with the building of permanent houses. All in all, it has been a year of great achievement, in spite of all the difficulties, by Ministry and industry. There have been disagreements on policy, but we have got started a larger number of houses than many expected; there has been a long, and as, I think, a sterile discussion on the merits of private enterprise and local government which was entirely beside the point because, as your President has said, private enterprise is building the great majority of local authorities' housing, and the real question is who shall organise the programme.

"Under another system," declared the Parliamentary Secretary, "we might have started more houses, but very few would have been finished—as happened after the last war. So far 36 times as many houses have been completed as in the comparable period after the 1914-18 war. Let us all—Government and industry—take some credit for this, but do not let us be complacent: we are still a long way from providing a house for every family that needs one, and when that is finished we are still faced with the task of clearing the slums."

The big problem was the deployment of the building industry's resources of labour and materials on priority work. Here he would see to it that the zonal committees made more use, as the President had suggested, of the practical advice of building employers' and employees' representatives.

On the subject of the mobile labour force, less than 1 per cent. of the total labour force was proposed by the Government to be made mobile. He emphasised that the Government was not trying to lure men away who were engaged on housing or current priority work, though when those jobs were finished such men would be eligible to join the mobile force, which was intended not to supplant existing building organisations, but to supplement them. As for the so-called "black market" building, the Government was considering making compulsory the display on every building job of the building licence.

HOUSING POLICY

DEBATE IN PARLIAMENT

On the motion for the adjournment,

MR. MANNINGHAM-BULLER initiated a debate on housing. He said that no one would have expected the number of permanent houses to have approached the pre-war monthly average of about 30,000, but at least they were entitled to expect that the Socialist housing programme in full flood would have produced more than 5,000 permanent houses in each of the summer months. It appeared that the main reason was the application of the four-to-one rule in relation to local authorities and private enterprise, which meant where there was a laggard authority nothing was done in the area. From the figures in the August report it was perfectly obvious that the local authorities started twice as many permanent houses and had finished less than half as many as private enterprise. It was not suggested that the sorry permanent housing returns were the fault of the local authorities, but that the Minister had placed on them a burden they were not designed to carry. There must be houses for the workers required by arable farming. Was the Minister now giving priorities to borough over rural authorities in the matter of housing?

MR. BEVAN, Minister of Health, said that the Government decided last year to place the principal responsibility for the provision of houses upon the local authorities, and the facts now showed that decision to have been entirely justified. All steps that could have been taken had been taken by the local authorities, and by August 31 they had handed over to the building industry the job of building 155,000 permanent houses, excluding 54,000 licences given for houses for sale. The number of houses built by local authorities with direct labour was negligible. If there were criticism to be levelled at his policy it ought to be that there should not be any houses for sale. He thought that there was considerable satisfaction in the country with the ethics of the housing policy.

He had had to take steps last winter in conjunction with the Ministers of Works, Supply, and Labour to see that the building materials industry was properly manned and producing the materials required, because on taking office not one single step had been taken to plan, prepare, or advise the industry, although Lord Woolton, the new hope of the Tory Party, had been appointed Minister of Reconstruction.

The temporary housing programme was so devised by the Tories that unfortunately its completion was now competing with the permanent programme. Practically all the materials for temporary houses had been made except for the aluminium one. It was merely a matter of assembling them so that the industry producing materials would be relieved of the necessity and would be able to switch over to the permanent programme.

Supply of Materials.

The output position of building materials expressed in numbers of houses was as follows:—

	July, 1945	*Dec.*, 1945	*Sept.*, 1946
	Per month	*Per month*	*Per month*
Bricks	4,740	5,350	17,031
Roofing tiles	3,281	3,543	11,942
Cookers, gas and electrical	15,534	23,700	43,340
Baths	8,773	12,200	21,348
Rainwater goods	6,777	9,031	17,392

In other words, they were producing housing equipment in those classes at the rate of 200,000 houses a year, so that the supply of building materials was marching with the number of houses put by the local authorities into contract, and served as a connecting link between the distributive and building industries.

A very large number of these materials did not reach the houses for which they were intended and the explanation lay in private economic adventure because they knew very well that there was a great dearth of housing repairs, a great desire on the part of housewives to get repairs done, and there were scores of thousands of building operatives working and draining away the materials in repairs of all kinds, and they were losing materials and labour which were badly needed for the completion of houses.

One of the reasons for the slower rate of the permanent programme was the very success of the local authorities who had put a higher number into contract than the industry were able to handle, and therefore a comparatively small labour force was spread too thinly over a large number of houses. So far from having cause for complaint, in some cases they had had to prevent local authorities from tendering for more houses.

Plea for Minister of Building.

LADY MEGAN LLOYD-GEORGE said, in fairness to the Government, it should be said they were faced with a major problem as great as any during the whole of the war. The necessity was to build houses to let—and not for sale—for those whose needs were greatest and whose

needs were least satisfied between the two wars. She could see no ideological differences in the matter, but there was no doubt, on the other hand, that the machine was stalling, and that there were serious defects. There was no doubt that a good deal of delay in housing was because too many Ministries were concerned. There were seven Ministries concerned, all with separate responsibilities and all pulling in different directions. She did not think that a Ministry of Housing was necessary, but the Prime Minister should extend to this matter his arrangement in regard to the Ministry of Defence. He should establish a Minister of Building to co-ordinate the activities of the various Ministries and be responsible, among other things, for priorities in building. There should also be regional committees representing the various Ministries concerned to make sure that decisions were taken quickly and without continuous reference back to Whitehall. This was the moment for Mr. Bevan to rearrange and reorganise his machinery.

MR. G. HICKS said he must correct some of the statements made by the Minister of Health. Generally he was a supporter of the Government in all these matters, but the Minister had told them how, in regard to certain materials, nothing had been prepared at the Ministry of Works and nothing was inherited but a blank. He did not know who had given the Minister that information, but things were not like that at one period, he could assure him. The brick industry had been expanded and the Minister had said at a meeting of the Co-operative movement that there never had been any shortage of bricks. There was another thing to which he wanted to take exception. It was never stated by the Coalition Government that 500,000 houses of the Portal type were to be built. The sheet metal industry was solid on the point that the maximum output would be less than 90,000 in any year. The houses were to be prepared by engineering workers in the factories, and it was not expected that more than 10,000 building trade workers would be required to erect them. In that way an army of 90,000 building trade workers would have been left available for building houses in normal building trade materials. At first it was proposed to build only the one type of houses, but then plans were changed, this type and the other was adopted, and for these both building trade labour and materials were used in the manufacture and in the assembly.

MR. HARE said that the House would welcome Mr. Hicks's speech as giving the facts rather than the rhetoric which was customary from the Government side of the House. The Opposition's main charge against Mr. Bevan was that he put prejudice before production.

DR. CORLETT said that it would be disastrous if a feeling of frustration over the machinery set up by the Minister arose in local areas. A round-table conference between the regional officials and the officials of local authorities should be set up and all the cards put on the table, because it would be fatal if this sense of frustration spread.

CAPT. CROOKSHANK said that he resented the Minister's observation that the Conservatives had not co-operated in raising morale in the building industry. He thought morale in the industry was high, but that the industry was not getting the materials. If the Minister wanted any help in his campaign it would be given, but the Conservatives had never been asked to co-operate. What was wrong was Mr. Bevan's policy. People were more concerned with getting the maximum number of houses than with whether they were for sale or to let, whether built by private enterprise or publicly built. The sooner the right hon. gentleman and the Government reversed the present policy, the sooner would the houses be built. Mr. Bevan had absolutely failed in his policy.

MR. KEY, Parliamentary Secretary, Ministry of Health, said that never before in the country's history had there been such a nation-wide effort on the part of the local authorities. By March 31, 1920, out of 1,802 local authorities, only 390 were building houses or had sites under development, and only 715 houses had been completed. By August 31 this year 1,172 out of 1,469 local authorities had houses built or being completed, and they had built 6,803 permanent houses and had a further 89,584 under construction. Over 90 per cent. of the local authorities had tenders approved. To make another comparison, in the 21 months after the 1914-18 war, 6,127 houses had been completed, but in the 17 months after this last war the number was 24,957.

While this had been going on the repairs to 630,000 war-damaged houses had been completed, a further 89,000 had been made habitable, something like 50,000 temporary houses had been erected, and 25,000 families provided with accommodation by the adaptation and conversion of houses.

The labour actually employed on housing work had increased by 70 per cent. between July 31, 1945, and August 31, 1946. By the latter date the Government had provided accommodation for 200,000 families and had under construction accommodation for another 200,000.

"FUEL AND THE FUTURE"

MINISTRY OF FUEL AND POWER CONFERENCE

THE Ministry of Fuel and Power Conference, "Fuel and the Future," was held at the Central Hall, Westminster, from October 8 to 10. Section G of the Conference, "Modern Heating and the Architect," took place on the same dates in the Henry Jarvis Hall of the Royal Institute of British Architects, 66, Portland-place, W.1. Mr. L. H. Keay, President of the R.I.B.A., welcomed the delegates on the first day, and on Wednesday, October 9, the chair was taken by Mr. J. H. Forshaw, M.C., F.R.I.B.A., Chief Architect of the Ministry of Health.

The first day's proceedings were reported in our last issue. The second day's business is now given:—

MR. FORSHAW, in the course of his opening remarks, said: In the field of industrial design progress to-day was rapid and vigorous; it was of our own time and belonged to our everyday life. The danger of flooding the country with large quantities of inferior products was a real one, but it was held in check partly because of the scarcity of raw materials. It was essential to fight against cheap and low standard fittings in order to avoid a progressive decline, and architects would welcome the action taken by the Industrial Design Council in drawing the attention of manufacturers and the public to the importance of good design. He mentioned good design in its general sense, but the Conference was concerned with efficiency, cost, convenience of operation and cleaning as well as with appearance.

The building and equipment of new homes would be the major task before the country for the next ten years. The demand for heating appliances would be vast and urgent, and light, durable and inexpensive equipment was essential. By inexpensive, he did not mean cheap, although cost would be a relevant factor. Then whatever was designed or planned, it was necessary to keep prominently in mind the tenant's needs and to take full account of the requirements of the work of installation, maintenance and repair. By seeing that those requirements were fulfilled, much would be done for the housewife and for her family.

MR. J. S. HALES, presenting a paper on "New Types of Solid Fuel, Domestic Heating Appliances and Systems," mentioned the various improvements in post-war designs as compared with pre-war types, and went on to review modern types of heating and cooking appliances. Concluding, he said:

"Great though the improvements in solid fuel appliances have been during the last year or two it must be remembered that up until fairly recent times solid fuel has been plentiful and cheap in this country, and little incentive was given to develop appliances of high efficiency. All that is now changed, however, and the rate of progress of further developments and improvements in solid fuel appliances is likely to accelerate at an even increasing rate in order to utilise the reduced supplies of coal to the utmost.

"The production of larger quantities of smokeless fuel of both the manufactured and natural types which has been forecast will find a ready use in the improved appliances now being designed, many of which give their highest thermal efficiency on these fuels. Alongside these developments one may expect single appliances to burn bituminous coal with greatly reduced smoke emission, whilst the use of centralised systems with preformed plumbing and complete house heating services are likely to be of special interest.

"From the point of view of the householder the correct combination of the three fuels, solid fuel, gas and electricity, offers the best opportunity for a satisfactory heat service which combines the efficient use of the nation's coal with convenience and low cost to the user."

After papers on "New Types of Electrical Domestic Heating Appliances and Systems" and "New Types of Domestic Gas Appliances" had been read by MR. J. I. BERNARD, Chief Technical Officer, British Electrical Development Association, and MR. J. WHITE, respectively, MR. JOHN PINCKHEARD, A.R.I.B.A., discussed "The Influence of New Appliances and Systems on Architectural Design," Mr. Pinckheard said:—

It is possible to single out several aspects of the new domestic heating practice—the heating practice, that is, which is recommended by or implicit in the Egerton Report—each of which will, I think, have its effect on post-war domestic architecture. In particular I would select the following: (1) The conception of background heating; (2) the trend towards the use of a single appliance for the main space heating and water heating load; (3) the use of convected air for heating; (4) the controlled introduction of fresh air for combustion; (5) the introduction of new types of flue construction. I should say that I am for the moment regarding all these factors from the rather narrow standpoint of our immediate housing problems.

The recommendations of the Egerton Report are based on the acceptance of a method of heating which is familiarly described as "background heat plus topping-up." The main effect of background heating will be to increase the usable area of the house.

With heating throughout the house and a draught-free heating appliance we can expect to see an opening up of the main living area of the plan on the ground-floor level. And parallel with and complementary to this tendency will be an extension of the functions of the upstairs rooms.

The Single Multi-Duty Appliance.

The second aspect about which I want to speak is very closely related to the question of background heating. One of the most noticeable changes in the plans of post-war houses—apart from the improved standards of floor space—arises from a general trend towards the use of a single multi-duty heating appliance operating on solid fuel.

The multi-duty appliance will frequently be required to provide space heating up to full comfort conditions in the room in which it is situated, with background heating to the adjacent ground-floor room, background heating by warm air to the two main bedrooms and an adequate supply of domestic hot water. The fulfilment of these requirements is best achieved when the appliance is located centrally in the house. The typical pre-1939 plan will, it seems, be largely superseded by one with a central stack. With this type of installation the question of access becomes of special importance. Access is required to the back boiler and the plumbing connections, and to the auxiliary water heating appliance which may frequently be placed in the space behind the main appliance. Once again, the centrally placed stack has the advantage since it facilitates easy access to the appliance from the rear.

The incorporation of water heating with the main appliance has encouraged the adoption of a more efficient layout and more efficient insulation for the domestic hot water system, and in particular has resulted in bringing the cylinder close to the boiler in order to minimise the length of flow and return pipes. Admittedly this arrangement may result in longer draw-off pipes, but generally the heat losses from the draw-offs are more than balanced by the saving effected by a short flow and return. There

is a tendency, therefore, for the cylinder to be fixed on the ground floor rather than the first floor; in which case it can be conveniently installed in a cupboard adjoining the main stack. Some means of auxiliary water heating are highly desirable, especially in the summer months, and either an electric immersion heater or a gas circulator can be provided. If a gas circulator is adopted, it can often be fitted into the space behind the main appliance, or it can share the cupboard with the hot water cylinder.

The question of chimney sweeping is one which requires careful attention, especially where closed stoves are used. The provision of means of access to the back of the stove previously referred to suggests the possibility of sweeping from the rear.

Warm Air for Heating.

Where a single multi-duty appliance is installed warm air will be the normal means of supplying background heat to the upper floors. The influence of the single appliance on the small house plan has already been considered, and the use of warm air as a supplementary means of heating underlines the arguments already advanced in favour of the central stack. The main vertical warm air duct, associated with the stack, becomes an essential element in the plan, and more and more the tendency is for the house to be designed with the heating system rather than the heating being added to a previously determined plan.

In a typical installation the heating appliance is surrounded—except at the front—by a shrouding. The enclosed space constitutes a convection chamber where air drawn in at the base is warmed by contact with the hot surfaces of the heating appliance. A vertical duct—frequently formed by the shrouding to the main flue—conducts the warmed air to the bedrooms above. It is important to remember that the forces causing the warm air to rise in the ducts are very small in comparison with those due to wind pressure and chimney draughts. For this reason the design of the ducting, the placing of the inlet and outlet grilles and the avoidance of excessive air change are matters requiring the most careful consideration.

Intake Duct.

The air used in the warm air ducts may be either fresh air drawn in from outside or partially warmed air drawn from inside the house. The objection to drawing in outside air is that it will be unnecessarily cold and that to allow this air to enter the house an equal volume of warmed air must be discharged to waste. A further objection is that with an intake on an outside wall the circulation is much more liable to interference by wind pressure.

The alternative system where air is drawn from inside the house largely avoids these objections. It would be a mistake to suppose, however, that the same air is continually recirculated. A proportion of the warm air delivered to the bedrooms is being continually dissipated through flues, cracks, air bricks and so on; and, of course, must be if adequate ventilation is to be maintained. The most that it is safe to claim in this respect for the internal intake is that it probably reduces the rate of air change as compared with the intake from outside the house. The recommended situation for an internal intake is in the hall. Here the air is less likely to be laden with cooking and tobacco smells, and also the risk of draughts is less objectionable here than in other parts of the house.

The intake duct should deliver cool air at the lowest point in the convection chamber, and if possible immediately under the hot base of the heating appliance.

The ducts from the convection chamber delivering warmed air should be always vertical. Horizontal ducts are to be avoided. Experience with horizontal ducts has been conspicuously disappointing.

Generally speaking, the duct will not supply two or more grilles simultaneously at different levels. The higher grille will tend to rob the lower. It is essential that the grilles are closeable at will by a hit-and-miss device, so that warm air can be directed as required. In the typical three-bedroom plan grilles can normally be provided to two out of the three bedrooms. They should be kept away from windows and fireplaces and as low down to the floor as practicable, provided always that where fireplaces exist the inlet grille is above the level of the fireplace opening.

There should be always a warm air outlet in the room in which the heating appliance is situated, so that the occupier can deflect the whole of the available heat from the appliance into one room. If this is not done, there may be hardship where the tenant is unable to buy sufficient fuel to provide background heating throughout the whole house.

The problem of sound transference through ducts is one of the most difficult to overcome. Not only may sound travel across the duct between rooms on the same level, but also up the duct from the ground-floor rooms to the bedrooms, unless careful baffling arrangements are incorporated. This is one of the aspects on which research is needed and one on which I hope the B.R.S. will soon be in a position to give us some guidance.

Materials and Construction.

Ducts can be constructed of any incombustible material not likely to corrode. Galvanised steel, asbestos cement, brick or concrete block are all suitable. Fibreboard, black steel, plywood or timber are not suitable.

The controlled admission of fresh air for combustion has particular relevance for the type of installation we have just been discussing, but it is an advantage in connection with almost any solid fuel-burning appliance. It has always been the practice in the past for the solid fuel-burning appliance—generally the open fire—to draw the air necessary for combustion from the room in which the appliance is situated. As a result, a large volume of warmed air is continually drawn up the flue, to be replaced, of course, by an equal volume of cool air which finds its way in through the room. The importance of preventing this continuous discharge to waste will be appreciated when it is remembered that air change is normally responsible for about a quarter of the total annual heat lost.

There is a second consideration also to which we should pay attention—though it is not one to which a precise cash value can be attached; that is the question of the prevention of draughts. Architects have always been aware of the connection between open fire and draughts—an awareness which is reflected in house plans, in the placing of the fireplace away from doors and windows. It is highly questionable whether the placing of the fireplace can *prevent* draughts; the best that planning can do, within the limits of traditional practice, is to localise them. If the fire is to burn, then somehow air must find its way from the outside of the house to the inside. No amount of curtaining or draught excluders can provide a remedy.

The problem for the architect is to conduct a stream of fresh air to a point close to the fireplace without permitting it to pass at high velocity past the legs and ankles of the occupants.

The obvious answer to this difficulty is for the duct to run continuously from side to side of the house with inlet grilles located in opposite external walls. A tee branch from the main duct is then arranged to deliver air close to the fireplace. By this arrangement the varying effects of wind are balanced out and a steady air supply is ensured for the fire.

From the point of view of preserving flexibility in planning there is no doubt that such ducts are best out of the way and below floor level. To-day, however, the suspended timber ground floor is rather out of favour, and the solid concrete floor, which is the only practicable alternative, does offer difficulties when it comes to putting in ducts. Where there is no alternative to putting the fresh air duct below floor level, a 6-in. concrete or stoneware pipe can be laid just below the top of the concrete raft.

The exact positioning of the grille at the delivery end of the duct—that is, near the fireplace opening—requires some consideration. Horizontal grilles in the hearth itself should not be used, as they allow dust and ashes to be swept into the duct. If a built-in curb forms part of the hearth, the grille can sometimes be arranged in the vertical face of the curb towards the appliance. This brings the air in at the right place, but the construction around the hearth is apt to get rather involved. An alternative position and one simpler in construction is in the surround itself at the side of the appliance, and kept down fairly low.

Dr. F. M. Lea, Director, Building Research Station, who presided at the afternoon session, said it was not enough to put in heating appliances which would give a large amount of useful heat in the house in relation to the fuel they consumed if the houses were so constructed as to allow that heat to go wastefully out. Therefore the second aspect was the problem of insulation. In many ways it might be said that that was a simpler problem than the problem of appliance efficiency. As had been seen, they were not free agents as to the type of fuel they were going to get. They had to keep a certain balance between the different varieties of fuel, a balance which was determined by the production capacity of the fuel industries, but from the point of view of insulation that did not matter. The question was how to conserve the heat which had been put into a house. It was therefore a simpler problem, because it was something which could be done and from which there would be immediate results. Bound up with the question of insulation which was concerned with the overall heat losses in the house there was also the question of low-capacity linings on the

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inside of the walls. For that reason it was important to consider intermittent heating as opposed to continuous heating.

Insulation and Cost.

MR. R. FITZMAURICE, B.Sc., M.Inst.C.E., Hon. A.R.I.B.A., Deputy Chief Scientific Adviser, Ministry of Works, speaking on "Methods of Insulation and Cost," said "It is proposed to deal specifically with housing in this paper. The data which are assembled are, however, equally applicable to other buildings and the problem is basically the same for all buildings." The speaker continued:—

In the notes which follow the values of heat insulation quoted are in terms of estimated "Thermal Transmittance"—termed "U"—which is the overall heat transmittance from interior air to external air, taking account of all surface effects and is the figure appropriate for average external conditions. The values are given in terms of the heat flow through the structure expressed in British Thermal Units flowing through each square foot of the structure per hour for every degree Fahrenheit difference in temperature between inside and outside air. In the short time available it is proposed to examine the Thermal Transmittance "U," and the cost of various elements of the outer shell of buildings and to deal with them under the headings of external walls, roofs and ground floors. The costs are given as a range which is believed to be reasonably representative of current prices and are prime costs of materials and labour to which must be added the appropriate amounts for overheads, profit, etc.

External Walls.

With regard to external walls—traditional types—the Egerton Committee recommendation is that Thermal Transmittance "U" should not exceed 0.20 B.Th.U. per sq. ft. per hr. per deg. F. for any part of a house and should not exceed 0.15 for the walls of the warmed living-room where there is controllable heating apparatus. The following are costs and "U" values for various common traditional types of external wall:—

	Wall Construction.	*Cost Range for house of about 1,000 sq. ft.* £	*Thermal Transmittance, "U," B.Th.U., sq. ft., hr., deg. Fahr.*
(i)	9 in. brickwork, rendered and rough-cast ext., plastered int.	150–160	0.41
(ii)	As (i) but with ½ in. fibre board on wood battens in lieu of int. plaster.	155–168	0.22
(iii)	As (i) but with 1 in. wood-wool slab finished skim coat plaster stuck to brick with bitumen in lieu of int. plaster.	165–175	0.25
(iv)	As (i) but 14 in. brick-work in lieu of 9 in.	195–210	0.34
(v)	11 in. cavity wall, 4½ in. facings, 2 in. cavity, 4½ in. common brick, two coats plaster internally.	145–160	0.34
(vi)	As (v) but with 3 in. clinker concrete slab in lieu of inner leaf of 4½ in. brickwork.	130–145	0.27
(vii)	As (v) but with 4 in. clinker concrete slab in lieu of inner leaf of 4½ in. brickwork.	145–155	0.24
(viii)	As (vii) but with ½ in. fibre board on timber battens in lieu of two coats plaster internally.	150–165	0.15

The 9-in. solid brickwork has a thermal transmittance twice as great as the recommended value and should be ruled out. It can be improved, however, by the substitution of a fibreboard internal lining on battens in lieu of two coats of plaster for a moderate increase in cost.

"No Fines" Concrete.

As to poured concrete types, "No Fines" concrete has been an important means of economy in skilled labour and is likely to be extensively developed in the near future. The following costs and thermal transmittances are given for various mixes:—

	Wall Construction.	*Cost Range for house of about 1,000 sq. ft.* £	*Thermal Transmittance "U."*
	"No Fines" Concrete:		
(i)	8 in. clinker aggregate, render and rough cast ext., two coats plaster int.	120–130	0.30
(ii)	As (i) but 10 in. thick ..	125–140	0.25
(iii)	As (i) but 12 in. thick ..	140–150	0.22
(iv)	8 in. thick, ballast aggregate render and rough cast ext., plaster two coats int.	115–125	0.45
(v)	As (iv) but 10 in. thick	125–135	0.40
(vi)	As (iv) but 12 in. thick ..	135–140	0.36
(vii)	As (iv) 8 in. thick but with ½ in. fibreboard in lieu of int. plaster.	115–120	0.27
(viii)	As (iv) 8 in. thick but with 1 in. wood wool slab and plaster skim in lieu of int. plaster.	135–145	0.23

Looking at the above data it is evident that the choice of aggregate is all important in "No Fines" concrete. Clinker aggregates can give a wall with reasonably good insulation, and it is likely that "clean" clinker aggregate will be marketed in the near future. Ballast concrete "No Fines" walls cannot be brought down to reasonable values of thermal transmittance by thickening up, but they can be considerably improved by lining the shuttering with insulating boards and will still be very economical in cost.

Framed Walls.

Generally speaking, the framed walls, which are characteristic of many of the prefabricated and partially prefabricated house types now under development, can easily be brought down to the recommended values of thermal transmittance because it is possible to introduce a layer of highly insulating material within the thickness of the wall. The following are some typical values of costs and thermal transmittances for walls of this type:—

	Type of Construction.	*Cost for house of 1,000 sq. ft. floor area.* £	*"U," B.Th.U., sq. ft., hr., deg. Fahr*
(i)	Light timber framework, covered ext. with painted steel sheet, lined int. with plasterboard, 1 in. fibreglass quilt in cavity.	195–210	0.15
(ii)	Concrete posts with concrete slab ext. and plasterboard int., 1 in. fibreglass quilt in cavity.	150–205	0.15
(iii)	As (ii) but with 2 in. clinker concrete slab int. and sheet of aluminium foil on paper backing in cavity.	175–230	0.23
(iv)	Precast foamed slag concrete panels, 8 in. thick, mechanically erected, tile facing ext. and skim coat plaster int.	110–125	0.20

The conclusion is that the commendably low values of thermal transmittance are due to the facility with which highly insulating materials, such as fibreglass or slag wool can be incorporated in the framed structure. Incidentally, these materials are themselves relatively inexpensive.

Windows.

Windows account for a high proportion of the total heat loss from a warmed building. They also have a notable effect on the total heat balance by virtue of the admission of sun's heat, but obviously this effect only occurs when the sun is sufficiently high above the horizon. The heat loss through the windows at night is very high, the thermal transmittance through the glass being of the order of U=0.88, as compared with the recommended value for walls of U=0.20–0.15. The cost of wooden or metal windows complete with frames, glazing and painting is roughly of the order of half that of the corresponding area of walls for the cheaper wall construction. In order to minimise the high heat loss through the windows at night it is necessary to use reasonably heavy, tight-fitting curtains which will effect an important reduction or, alternatively, the use of double glazing may well be justified. Double glazing has become standard practice in many countries, which are little, if any, colder than the colder parts of Great Britain.

Pitched Roofs.

The position with pitched roofs is that the normal pre-war practice gave a roof with very poor thermal insulation. It is very easy, however, to improve this to the recommended standards at moderate cost. The Egerton standards for roofs are that Thermal Transmittance "U" should not exceed 0.2–0.3 B.Th.U. per sq. ft. per hr. per deg. F. The following are appropriate costs and thermal transmittances for various types of pitched roof:—

	Construction.	*Cost for house of about 1,000 sq. ft.* £	*Thermal Transmittance "U." B.Th.U., sq. ft., hr., deg. Fahr.*
(i)	Plain tiling on battens, felt, rafters, purlins, with plasterboard ceiling, plaster skimmed.	85–100	0.43
(ii)	As (i) but with 1 in. fibreglass or slag wool over ceiling joists.	95–105	0.18
(iii)	As (i) but with fibreboard in lieu of plasterboard ceiling.	85–100	0.15
(iv)	Asbestos cement sheeting on timber purlins and light board trusses with plasterboard ceiling.	75–85	0.43
(v)	As (iv) but fibreboard ceiling.	75–85	0.25
(vi)	As (iv) but 1 in. fibreglass or slag wool over ceiling joists.	80–90	0.15

In examining the above figures it is obvious that the modest extra cost of adequate thermal insulation is abundantly justified. There is the question where to put the insulation. By placing

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it over the ceiling joists instead of up the roof slope the quantity of material required is signifiantly less and fixing is much simplified. Storage tanks and water pipes can, and should, be individually insulated to protect them against frost.

Flat Roofs.

The following are some approximate costs and thermal transmittance values for various types of flat roof :—

	Construction.	*Cost for house of 1,000 sq. ft. floor area.* £	*"U" B.Th.U., sq. ft., hr., deg. Fahr.*
(i)	7 in. by 2 in. timber joists, 1 in. nominal wood boarding fitted to falls, finished two layers 3-ply bitumen felt, bitumen coated and topped, 1 in. macadam, plasterboard ceiling under.	70–75	0.29
(ii)	As above but fibreboard ceiling in lieu of plasterboard.	70–75	0.22
(iii)	As (ii) above but with aluminium foil on paper draped over joists.	75–85	0.16
(iv)	5 in. reinforced concrete slab, plastered ceiling, finished two coats 3-ply bitumen felt, coated bitumen and gritted.	80–85	0.52
(v)	As (iv) but fibreboard ceiling laid on shuttering.	85–90	0.33
(vi)	As (v) above but with 2-in. ave. foamed slag concrete screed below bitumen felt.	85–95	0.25
(vii)	As (iv) but with R.C. and hollow tile slab in lieu of solid R.C.	80–90	0.44
(viii)	Precast reinforced concrete joists, 2½ in. foamed slag concrete slab over with 2 in. ave. foamed slag concrete screed covered two layers 3-ply bitumen felt, bitumen coated and gritted, ceiling of plasterboard on timber fillets attached to joists with necessary noggings.	65–80	0.20

The conclusion is that the flat roof can easily be brought down to the required standards of insulation, but that the concrete roof cast *in situ* is not quite so easy to deal with economically as the other types.

Floors.

The main problem with the ground floor is the choice between the normal ventilated timber floor and the solid floor direct on a concrete slab. So far as costs are concerned, the problem is complicated by the amount of under-building required.

	Construction.	*Cost for house of 1,000 sq. ft.* £	*"U" B.Th.U., per sq. ft., per hr., per deg. Fahr.*
(i)	4 in. by 2 in. timber joists on honeycomb sleeper walls, 1 in. nominal T. & G. boarding ventilated under, including excavated hardcore and over-site concrete.	60–70	0.35
(ii)	As (i) but with building paper covered both sides aluminium foil draped over joists.	65–75	0.20
(iii)	As (i) but with 1 in. fibreglass or slag wool quilt draped over joists.	65–75	0.16
(iv)	1 in. nominal T. & G. boarding on 1½ in. by ¾ in. dovetail fillets embedded in surface of concrete slab, with 10 lb. per sq. yd. pitch coating applied hot over surface of concrete and fillets including excavation and hardcore under.	50–55	0.15
(v)	As (iv) but with ¾ in. wood block laid in bitumen in lieu of boarding.	50–55	0.15
(vi)	As (iv) but with granolithic finish in lieu of boarding.	35–40	0.20
(vii)	As (iv) but with pitch mastic in lieu of boarding.	50–55	0.20

THE CITY CHURCHES COMMISSION

PROPOSALS FOR THE FUTURE

PROPOSALS for the rebuilding or restoration, the abandonment or adaptation to alternative uses of the bombed churches in the City of London are made in the final report* of the Bishop of London's Commission under the chairmanship of Lord Merriman, which was issued for publication on Tuesday.

It is recommended that of the 20 bombed churches 11 should be rebuilt or restored; five, including two Wren churches, should have their sites sold; St. Augustine's, Watling-street, should be used as either chapter house or choir school for St. Paul's Cathedral; and the remaining three, all former Wren churches, should be the sites for extra parochial church halls or institutes, with the primary object of "administering to the needs of youth."

The five churches of which it is proposed the sites should be sold are St. Mildred, Bread-street, St. Mary Aldermanbury, St. Andrew-by-the-Wardrobe, St. Alban, Wood-street, and St. Swithun, London Stone. "We realise," the commission state, "that the public will deplore the disappearance of some of these churches, particularly when they are so prominently placed as St. Andrew-by-the-Wardrobe, and St. Swithun's, London Stone. We are aware that the opinion has been expressed in certain quarters that some, at any rate, of the sites of churches which cannot be rebuilt should be left as open spaces, with or without the retention of such ruins as remain. But this could only be done at the expense of our other proposals, to which we attach paramount importance."

Churches to be Rebuilt.

The 11 churches which it is proposed should be rebuilt or restored, with a summary of the reasons, are as follows :—

ALL HALLOWS-BY-THE-TOWER.—Has been so damaged that restoration in the architectural sense may well be said to be undesirable, but its claim to rebuilding as the parent church of Toc H seems unanswerable.

ST. OLAVE, HART-STREET.—Apart from being a pre-Fire church with associations with Pepys and Trinity House, "had a strong parochial life."

ST. GILES, CRIPPLEGATE.—"Was at all times an important church and will become more so if our recommendations regarding its neighbours are acceptable."

ST. LAWRENCE, JEWRY.—Should be restored as nearly as possible to its former state, assuming that the plans for the rebuilding of Guildhall make it possible.

ST. STEPHEN, WALBROOK.—"Must unquestionably be restored" because of its paramount architectural value. It is also, it is stated, the Lord Mayor's church.

ST. BRIDE, FLEET-STREET.—"Has been seriously damaged, but its magnificent tower survives. Its close connection with the newspaper world makes its restoration imperative."

ST. MARY LE BOW, CHEAPSIDE.—"Perhaps the most closely associated with the life of the ordinary Londoner," with "the most sumptuous and splendid of Wren's Renaissance towers," can be repaired.

ST. ANDREW, HOLBORN.—"Capable of restoration, has a strong parochial life, and is the outstanding representative among the City churches of the evangelical tradition."

ST. NICHOLAS COLE ABBEY.—Can be restored, and advantage, it is suggested, might be taken if possible to clear the south façade of the office buildings which encroach upon it.

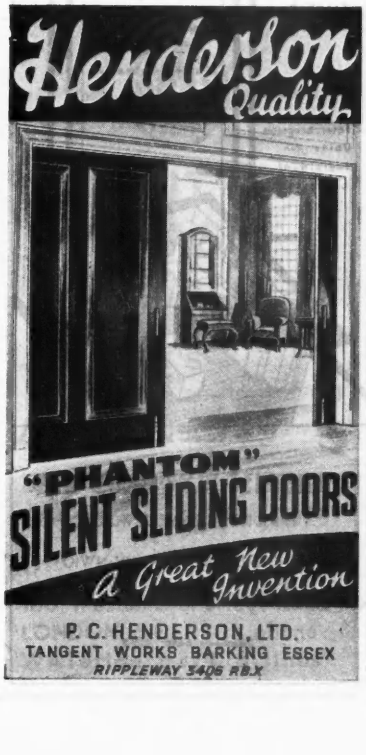
ST. MICHAEL PATERNOSTER ROYAL.—Has a tower which groups finely with that of St. James Garlickhythe.

ST. VEDAST, FOSTER-LANE.—With its "wholly delightful spire" has suffered only trifling damage.

Three Wren churches, the sites of which it is proposed should be used for new church institutes, are St. Stephen, Coleman-street, Christ Church, Greyfriars, and St. Dunstan-in-the-East.

The money acquired from selling the five sites should, it is proposed, supplement war damage payments in helping to meet the cost of the scheme and should also, it is suggested, be devoted to helping areas in Greater London where the provision of churches is inadequate.

* "The City Churches." Press and Publications Dept., Church Assembly. Price 1s.



Gibraltar Housing Scheme Contract.

Humphreys, Ltd., of Knightsbridge, S.W.7, have been awarded a contract at £1,800,000 to build 60 blocks of flats and 472 houses at Gibraltar. The architects are Messrs. Robert Atkinson and A. F. B. Anderson, FF.R.I.B.A., 13, Manchester-square, W.1.

Building Industry Employment Figures.

According to figures recently issued by the Ministry of Labour and National Service, the numbers employed in July and August, 1946, in the building and civil engineering industry were 1,200,000 and 1,225,000 respectively. The figure for August represents 93 per cent. of the number engaged in the industry in mid-1939.

Ten Years of Progress.

At the tenth anniversary dinner of Messrs. Acrow (Engineers), Ltd., recently held at the Dorchester Hotel, Mr. W. A. de Vigier, chairman and managing director, described the progress which had been made and mentioned the success of the firm's steel shuttering devices, chief among which are steel shuttering panels, adjustable steel props, telescopic floor-centres and steel trestles.

Apart from their widespread use in this country, we are informed that they are being used extensively abroad, particularly in South Africa. Firstly, they obviate the use of timber for shuttering which has always been a long, costly and wasteful technique; secondly, steel shuttering devices can be dealt with by unskilled labour.

According to Mr. de Vigier, the next ten years will show even greater progress than has been made in the first decade of the company's development. A new plant catalogue, "Acrow Builders' Light Plant No. 11," will be ready shortly.

NEWS ITEMS

Export of Building Materials.

In an Order dated October 12, operative as from October 21, the Board of Trade announces that the following items have been added to the export licensing list and licences will in future be necessary for their export to any destination: Building bricks of all kinds, roofing and dampcourse slates, slate slabs, and roofing tiles.

War Damage Surplus Materials.

Minister of Health Circular 197/46, issued to all housing authorities and county councils in England for information, sets out the arrangements which have been agreed with the War Damage Commission and the Ministry of Works regarding the disposal of stocks of materials, etc., held for the repair of war-damaged houses and now regarded as surplus to requirements.

Scottish Housing Chairman.

The Secretary of State for Scotland announces that Mr. James Dalziel has resigned his appointment as chairman of the Scottish Special Housing Association and that his resignation has been accepted by the Council of Management of the Association.

The Council have unanimously appointed Mr. A. G. McBain to be part-time chairman of the Association in Mr. Dalziel's place, with the concurrence of the Secretary of State.

Danish Students' Industrial Visit.

On October 17 a party of Danish architectural students on a three weeks' reciprocal visit following the summer recess tour by Edinburgh students to Denmark, toured the production departments of the North British Rubber Company at Castle Mills, Edinburgh, in company with students of the Planning Section of the Edinburgh School of Architecture, viewing the various stages of manufacture from raw material to the finished article.

Building Trade Clerks.

The assistant general secretary of the Clerical and Administrative Workers' Union, 70, St. George's-square, S.W.1, states that clerks in certain sections of the building industry have taken up membership, and in such cases agreements have been negotiated for them. Over a wide field, however, the conditions of clerks are unregulated by trade union agreements, with the result that standards fall, or do not exist at all. It should be well known that the above Union acts for building trade clerks.

Hammersmith School of Building.

Until they reach the age of 18 years, all building trade apprentices must attend approved day classes on one whole day or two half-days per week. In addition, they must attend evening classes on two evenings a week. The Hammersmith School of Building and Arts and Crafts, Lime-grove, Shepherd's Bush, W.12, provides suitable courses of instruction to apprentice and day release course students in preparation for the full Technological Certificate of the City and Guilds of London Institute, and, in suitable cases, for the ordinary National Certificate in Building.

At the Senior Day Building School, the new session of which commenced on September 9, students are prepared for important positions in the building industry. Courses are also provided for those intending to qualify as architects, quantity surveyors, structural engineers, sanitary engineers and building surveyors.

Mr. H. W. Mole, F.R.I.B.A., M.I. Struct.E., Principal of the school, informs us that arrangements are being made to cope with the large number of men and youths who desire training for the building industry.

The Northern Polytechnic.

This month the Northern Polytechnic, Holloway, London, N.7, is celebrating the 50th anniversary of its opening in 1896. On Friday, October 25, the Polytechnic will be open to visitors, and a warm welcome will be extended by present members of the staff to all former members of the staff and students. A number of exhibitions and demonstrations will be on view in all sections of the Department of Architecture, Surveying and Building from 6.30 p.m. until 9 p.m.

"THE BUILDER" PRICES

Building Materials Prices.

Changes in the authorised maximum selling prices of metal windows, Cornish slates, aluminous cement and "Nautilus" flue blocks are announced by the Ministry of Works.

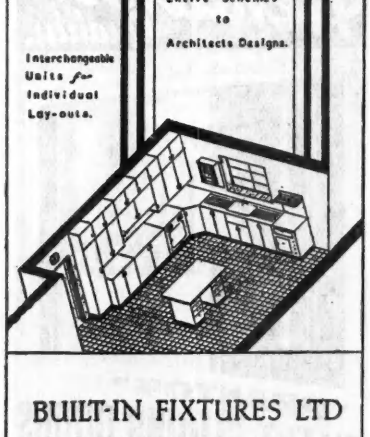
Metal Windows: On application by the Metal Window Manufacturers' Association, Ltd., the Minister of Works has authorised an increase of 7½ per cent. on the list selling prices of standard metal windows and doors, the increase to be effective as from September 25, 1946. The total increase on list prices is, therefore, now 12½ per cent.

The extra charge authorised for galvanising has been increased by 1½ per cent. to 17½ per cent., also as from September 25, 1946.

Cornish Slates: The Minister of Works has authorised an increase of 7½ per cent. in current selling prices of Cornish slates as from September 10, 1946.

Aluminous Cement: The ex-works selling price of aluminous cement manufactured by the Aluminous Cement Co., Ltd., has, under a voluntary price agreement between that company and the Ministry of Works, been reduced by 15s. to £11 per ton, as from September 26, 1946.

"Nautilus" Flue Blocks: As a result of negotiations with the Ministry of Works, the Nautilus Fire Co., Ltd., have reduced the selling prices of "Nautilus" flue blocks by 10 per cent., the reduction being operative on all dispatches from October 1, 1946.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THE SCOTTISH BUILDER

NEW BUILDINGS

Cambuslang.—Plans in hand for dining department, etc., at St. Bride's R.C. school, for which the architect is William Watt, Albert-st., Motherwell.

Glasgow.—Alterations and additions proposed at Royal Exchange-sq., for which the architect is James A. Laird, 55, West Regent-st., Glasgow. It is proposed to reconstruct the premises of Lawrie Bros., Ltd., for which the architects are Gillespie, Kidd and Coia, 19, Waterloo-st., Glasgow.

Glasgow.—Alterations and additions, for John Young and Son, Kelvinhaugh-st., for which the architects are Gratton and McLean, 112, West Regent-st., Glasgow. Edminston, Brown and Co., Ltd., 45, Midwharf-st., Glasgow, will erect offices and workshops at Whitehill-st., Glasgow.

FUTURE CONSTRUCTION

CONTRACTS OPEN

For some contracts still open but not included in this list, see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

BUILDING

NOVEMBER 1.

†***Amesbury R.D.C.**—20 houses at Winterbourne. Bothams and Brown (L.), 32, Chipperla., Salisbury. Dep. £2 2s. Tenders by November 20.

†**Beverley T.C.**—56 houses at Cherry Tree-la. estate. T.C. Dep. £2 2s.

†***Salisbury and Wilton R.D.C.**—8 houses at 2 sites. Bothams and Brown (L.), 32, Chipper-la., Salisbury. Dep. £2 2s. Tenders by November 20.

NOVEMBER 2.

†***East Suffolk C.C.**—Canteen kitchen and dining-room at Bramford Secondary Modern School, nr. Ipswich. E. J. Symcox (F.), County A. Dep. £2 2s. Tenders by November 30.

Skipton U.D.C.—32 houses at Horse-close site, Keighley-rd. K. B. Robinson, A.M.I.C.E., S. Dep. £2 2s.

NOVEMBER 4.

Brentford and Chiswick T.C.—Repair of war damage at West Wing of Brentford Boys' Secondary Modern School. B.E. and S. Dep. £2 2s.

Clacton U.D.C.—88 houses, site works and incidental works at Bull Hill estate. W. Aiston, A.M.Inst.C.E., Architect. E. & S. Dep. £3 3s.

Hemel Hempstead R.D.C.—3 pairs of Swedish houses at Jockey-end, Gaddesden-row. S. Dep. £1 1s.

Huntingdon E.C.—Kitchen and dining-room and conversion of school sanitary block and headmaster's external closet from earth closet to water closets, etc., at Sawtry School, Sawtry. T. H. Longstaff, County A.

Liverpool T.C.—School kitchen and canteen, Northway School, Edge-la.-drive. City A. and Director of Housing. Dep. £2 2s. to City Treas.

Llanelly R.D.C.—14 houses at Trallwm-rd., Pencelliogi. Architect and S., 12, Station-rd., Llanelly. Dep. £2 2s.

Llanelly R.D.C.—10 Airey houses at Pwll. Architect and S., 12, Station-rd., Llanelly. Dep. £2 2s.

†**Oundle and Thrapston R.D.C.**—Site works and erection of 12 "Airey" houses at Brigstock. Gotch, Saunders and Surridge, Bank-chbrs., Kettering.

West Riding C.C.—Kitchen, dining-room and classroom at Thorne Grammar School. County A

NOVEMBER 5.

Blandford Forum T.C.—13 pairs of houses at Salisbury-rd. L. Magnus Austin (F.), 51, Towngate-st., Poole. Dep. £2 2s.

Gower R.D.C.—20 Airey houses at various sites E., 8, Uplands-cres., Swansea. Dep. £3 3s.

Isle of Wight R.D.C.—Nine pairs of houses at Bembridge and 3 pairs at Yarmouth. E. L. Smith & Son, architects, High-st., Sandown. Dep. £2 2s.

Oxon C.C.—Canteen kitchen and dining-room at Garsington C. of E. School. G. R. Hutton, County A. Dep. £2 2s.

NOVEMBER 6.

***Barnes T.C.**—81 maisonettes and one shop at Lonsdale-rd. B.E. and S. Dep. £2.

†***Enfield U.D.C.**—48 flats (10 blocks) at North field-rd. site. E. and S., 7, Little Park-gdns., Enfield. Dep. £2 2s. Tenders by November 29.

Erith T.C.—96 houses, Lesney Farm housing estate. J. H. Clayton, B.E. and S. Dep. £2 2s.

NOVEMBER 7.

Isle of Man Local Government Board.—24 houses with site, layout-roads, drainage off Church-rd., Lonan. J. P. Lomas, chartered architect, Martins Bank-chbrs., Victoria-st., Douglas, I. of M. Dep. £2 2s.

NOVEMBER 8.

Manchester T.C.—Erection of treatment rooms to wards 1 and 2 and conversion of shelters at Abergele Sanatorium. City A. Dep. £1 1s.

Manchester T.C.—Houses and flats at Wythenshawe: (1) 71 and 40 houses at Baguley Hall area, contracts 12b and 12c; (2) 129 houses at Newall Green area, contract 18; (3) 143 flats at New Cross area; (4) 135 flats at Ardwick area. Housing Dept. Dep. £1 1s. each individual scheme.

NOVEMBER 9.

Cumberland C.C.—Canteen at Haverigg Boys' School. J. H. Haughan, County A.

Havant and Waterloo U.D.C.—34 houses at site No. 3, Victoria-rd., Emsworth. E. and S. Dep. £2 2s.

NOVEMBER 11.

***Lindsey C.C.**—4 pairs of police houses with roads, sewers and footpaths at Civic Centre site, Scunthorpe. Place, Leslie and Holden, quantity surveyors, 23, South King-street, Blackpool.

***Weymouth and Melcombe Regis T.C.**—24 houses and 12 flats at Shortlands-rd., Upwey. B.E. and S. Dep. £2 2s.

Wigan R.D.C.—25 houses at Parbold and 46 houses at Wrightington, with roads and sewers. J. Holding, S., Bank-chbrs., Wallgate, Wigan. Dep. £3 3s.

NOVEMBER 14.

Newtown and Llanidloes R.D.C.—2 pairs of Airey houses at Bettws with road, drainage, etc., and construction of sewage disposal plant, etc., and 1 pair of houses at Caerws. W. B. Bond, quantity surveyor, 3, Newhall-st., Birmingham 3. Dep. £2 2s.

Spilsby R.D.C.—1 pair of Swedish houses, 4 pairs of brick houses and 1 pair of brick bungalows with site and sewage disposal works for the houses and for 14 prefabricated bungalows. Wm. Saunders and Partners, architects, 24, Castle-gate, Newark-on-Trent. Dep. £2 2s.

***Sutton Coldfield T.C.**—12 bungalows at Tower rd. estate. B.S. Dep. £2 2s.

NOVEMBER 16.

Keith (Banffshire) T.C.—Work in various trades for 14 houses at South Cuthil site. Burgh S. Dep. £1.

NOVEMBER 18.

***Brighton E.C.**—(1) Dining-room and kitchen at Moulsecoomb School; (2) dining-room and scullery at St. Luke's Terrace School. Tenders also invited for adaptations at Royal Sussex Hotel for use as Training College Hostel. B.E. and S. Dep. £3 3s.

***Cuckfield U.D.C.**—76 houses and flats at Barn Cottage estate, America-la., Haywards Heath. S. Dep. £2 2s.

Warwickshire and Coventry Joint Committee for Tuberculosis.—Adaptations at "Grove House," Keresley, to form Mass Miniature Radiography Headquarters. C. H. Elkins (L.), Architect to Joint Committee, Shire Hall, Warwick. Dep. £2 2s.

***Wembley T.C.**—64 houses with drainage and site works at Sudbury Farm estate. Boro' Treas. Dep. £1 1s.

NOVEMBER 20.

Pontypridd and Rhondda Joint Water Board.—Reconstrucion of Ionwood reservoir. W. E. Holmes Watkins, B.Sc., A.M.I.C.E., 23, Gelliwastad-rd., Pontypridd. Dep. £3 3s.

NOVEMBER 26.

Tyldesley U.D.C.—40 houses at Astley-st., site No. 2. D. Urwin, E. and S. Dep. £3 3s.

NOVEMBER 30.

***Wolverton U.D.C.**—Roads and sewers at Furze-way estates. E. and S. Dep. £1 1s.

NO DATE.

Axminster R.D.C.—28 houses at Coly Vale, Colyton. F. S. Kett, chartered architect, Trinity-sq., Axminster. Dep. £2 2s.

Gosport T.C.—6 temporary shops at Clayhall site. B.E. and S. Dep. £1 1s.

MISCELLANEOUS

NOVEMBER 6.

***Near Bicester.**—Demolition of one-storey ward block at Middleton Park, Middleton Stoney, near Bicester, Oxon, for British Red Cross Society. Thurlow and Lucas, architects and surveyors, 25, High-st., High Wycombe.

NOVEMBER 11.

Hammersmith B.C.—Removal and collection of Anderson and Morrison shelters. B.E. and S.

Newport C.B.—Demolition and clearance of shelters and C.D. structures. B.E. and S. Dep. £1 1s.

ROADS, SEWERAGE AND WATER WORKS

NOVEMBER 4.

Kingsclere and Whitchurch R.D.C.—Roads at St. Mary Bourne site, No. 46. F. Henshaw, architect, Westminster Bank-chbrs., Andover. Dep. £2 2s.

Warminster U.D.C. — Reinforced concrete reservoir and spun-iron mains, etc., Contract No. 6. Lemon and Blizard, consulting E., Castle-la., Southampton. Dep. £2 2s.

NOVEMBER 5.

Ashby-de-la-Zouch R.D.C.—Supply and laying of approx. 3,000 yds. of 4 in. and 3 in. dia. iron water mains at Normanton-le-Heath. Pick, Everard, Keay and Gimson, 6, Millstone-la., Leicester. Dep. £2 2s.

Chigwell U.D.C.—Making-up 3 roads. E. and S. Dep. £2 2s.

Clacton U.D.C.—Construction of foul and water sewers in Northern area. E. and S. Dep. £3 3s.

Hitchin U.D.C.—Laying of 900 yds. 3 in. and 530 yds. 4 in. spun water-mains at Highover Farm estate, Walsworth. C. Dep. £1 1s.

West Ham C.B.—Roads and sewers at Tidal Basin site (North part). B.E. Dep. £2.

NOVEMBER 7.

Leeds T.C.—Kerbing, flagging, tarpaving and concreting footpaths and roads in various streets. Highways E. Dep. £1 1s.

Stourbridge T.C.—Road and sewer works at Norton estate, part 2. B.E. and S. Dep. £2 2s.

NOVEMBER 9.

Salford T.C.—Roads and sewers at housing estate, Fairhope, Eccles Old-rd. City E.

Shoreham-by-Sea U.D.C.—Roads and sewers at Stoney-la. estate, Kingston-by-Sea. S. Dep. £3 3s.

Tynemouth C.B.—(1) Streets and sewerage works at Lynn-rd. site; (2) connecting sewer from Moorhouses to Preston North-rd. B.S. Dep. £2 2s.

NOVEMBER 11.

Lancs C.C.—Construction and completion of new road on Southport-Ormskirk-St. Helens Trunk-rd., A570. County S. and Bridgmaster. Dep. £5 5s.

Magor and St. Mellons R.D.C.—Construction of sewer between High Cross and Western Valley trunk sewer. Thomas and Morgan and Partners, 23, Gelliwastad-rd., Pontypridd. Dep. £5 5s.

Swaffham R.D.C.—Sinking of borehole at West Bradenham. W. Herbert Bateman and Partners, Halifax House, Bank Plain, Norwich. Dep. £2 2s.

Wembley T.C.—Reconstruction of concrete road and resurfacing of Church-la. and Tudor-gdns., Kingsbury. Boro' Treas. Dep. £2 2s.

Weymouth and Melcombe Regis T.C.—Road and drainage works at Lynch-la. industrial site. B.E. and S. Dep. £2 2s.

NOVEMBER 12.

Bridgwater T.C.—Relaying parts of Bristol and Taunton trunk roads. B.E.

***Caterham and Warlingham U.D.C.**—Roads and sewers at Sunnybank, Farleigh-rd., Warlingham. E. and S.

Spalding R.D.C.—450 yds. of 15 in. dia. concrete pipe sewers, 450 yds. of 12 in., 2,700 yds. of 9 in. and 2,500 yds. of 6 in. dia. salt-glazed ware sewers, precast concrete manholes, about 1,000 yds. of 5 in. dia. spun-iron socket and spigot pipes, two brick pumping stations and sewage disposal works, etc. Silcock and Simpson, consulting E., 10, Park-row, Leeds 1. Dep. £5.

NOVEMBER 13.

Brightlingsea U.D.C.—Roads and sewers at Chapel-rd. estate. S. Dep. £2.

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NOVEMBER 14.

***Wokingham R.D.C.**—Roads and sewers. Eric G. V. Hives (L.), 3, Cork-st., Reading, and 106, Regent-st., W.1. Dep. £2 2s.

***Wokingham R.D.C.**—Roads and sewers at Loddon Bridge-rd. site, Woodley. Chas. Smith and Son (F. and A.), 164, Friar-st., Reading. Dep. £2 2s.

NOVEMBER 15.

Newport C.B.—Laying approx. 8 miles of 28-in. steel trunk main, etc. W. W. Marsden, M.Inst.C.E., Crown Arcade, Newport, Mon. Dep. £20.

NOVEMBER 16.

†**Wycombe R.D.C.**—Construction of approx. 850 yds. of 4-in. cast-iron sewage pumping main, pumping station, etc. D. Balfour and Sons, consulting E., 131, Victoria-st., Westminster, S.W.1. Dep. £3.

NOVEMBER 18.

Atherstone R.D.C.—Construction of sewer at Dordon. E. and S. Dep. £3 3s.

East Barnet U.D.C.—(a) Extension of Eastern low level sewer; (b) storm-water relief sewer, Oakdale to Pymmes Brook. E. and S. Dep. £2 each contract.

Halesworth (Suffolk) U.D.C.—Construction of approx. 4 miles of stoneware and cast-iron sewers, etc. W. C. Easdale, consulting E., 1, Victoria-st., London, S.W.1. Dep. £5 5s.

NOVEMBER 21.

Aylesbury R.D.C.—Sewerage works at Stoke Mandeville. Elliott and Brown, civil engineers, Stanley House, Pelham-rd., Nottingham. Dep. £3 3s.

DECEMBER 2.

Holsworthy R.D.C.—Laying of 3,580 yds. of 4-in. and 6,110 yds. of 3-in. asbestos-cement mains, together with construction of two reinforced concrete reservoirs, two pumphouses, etc. Rofe and Rafferty, chartered civil engineers, 3, Victoria-st., Westminster, S.W.1. Dep. £2 2s.

PUBLIC APPOINTMENTS

Full details of Public Appointments open will be found in the advertisement pages of this and previous issues.

GENERAL BUILDING WORK (LONDON)

Battersea.—HOUSING.—L.C.C. have sanctioned the borrowing by the B.C. of £49,618 for the acquisition and clearance of a site in Honeywell-rd. and the erection thereon of 30 flat dwellings.

Bermondsey.—HOUSING.—B.C. are to apply to the L.C.C. for sanction to borrow £55,290 for the erection of 38 houses on Arnolds Estate, Block 2.

Bethnal Green.—HOUSING.—The Nag's Head Housing Society, Ltd., propose to erect 36 flats in Shipton House on the Nag's Head-fields area.

Brixton.—SCHOOL OF BUILDING.—L.C.C. are to acquire Brixton Orphanage, Barrington-rd., for use in connection with the Brixton School of Building. It is estimated that repairs and adaptations will cost £18,000.

Camberwell. — HOSPITAL BUILDINGS.—L.C.C. have approved expenditure of £50,450 on the reinstatement of the boiler-house, provision of foul-washhouse, laundry, etc., at St. Giles's Hospital.

Camberwell.—HOUSING.—Church Army Housing, Ltd., propose to erect 19 dwellings on the Dalwood-st. site.

Chelsea.—RESTORATION OF LIBRARY.—B.C. propose to restore the library building. Tenders are to be invited shortly.

Ealing.—FLATS.—A block of 60 flats for the Liverpool Victoria Friendly Society are to be built to plans by Messrs. F. Boreham, Son & Wallace, Victoria House, Southampton-row, W.C.1.

Ealing.—CHURCH.—Plans for the rebuilding of the Methodist Church, Ruislip-rd., have been approved. Plans prepared by Messrs. G. Baines & Sons, 121, Victoria-st., S.W.1.

Ealing.—FACTORY.—Mr. E. H. Firmin (F.), 111, Park-st., W.1, has prepared plans, which have been approved, for the erection of a factory in Walmgate-rd. for Messrs. C. Zimmerman & Co., Ltd.

Finsbury.—HOUSING.—B.C. propose housing scheme for Halford-sq., estimated cost of which will be approximately £17,000.

Great Portland-st.—POLYTECHNIC.—Regent-st. Polytechnic propose to complete the new building in Great Portland-st. at an estimated cost of £100,000.

Hackney.—HOUSING.—The M. of H. has approved the re-building of 10 houses in Gunton- and Cleveleys-rds. by the B.C. by direct labour at an estimated cost of £13,700.

Hackney.—HOUSING.—B.C. is applying to L.C.C. for sanction to a loan of £22,160 for the acquisition for housing purposes of site of 2.7 acres at Greenwood-rd.

Hampstead.—HOUSING.—B.C. are to appoint Mr. J. B. F. Cowper, F.R.I.B.A., 39, Gordon-sq., W.C.1, to be architect for the Kilburn Priory Housing Scheme. Sketch drawings and layout plans have been submitted to the Council.

Honor Oak.—PERAMBULATOR AND CYCLE SHEDS.—219 perambulator or cycle sheds are to be erected by the L.C.C. on the Honor Oak Estate, Lewisham. Estimated cost, £3,600.

Lewisham. — WORKS APPROVED.—L.C.C. has granted permission in regard to the following applications to carry out work as stated: Messrs. Amey Bros., rebuilding Nos. 115-127, Arngask-rd.; L. H. Harrington, to erect extension to existing bakery (Clarks, Ltd.), Southbrook-rd.; P. B. Dannatt, rebuilding of 60-62, Woolstone-rd.; H. M. Grellier & Son, rebuilding of Nos. 17-23, Whittell-gdns. and 54-60, Sydenham Park-rd.; Vigers & Co., rebuilding of Nos. 54-60, Further Green-rd.; C. G. Eaglen, rebuilding of Nos. 21-31, Farmcote-rd.

London.—WORKING CLASS ESTATES.—The Ecclesiastical Commissioners plan to spend £1,000,000 for redevelopment of working-class estates in London over a period of 10 years.

Paddington. — STATION ENLARGEMENT.—G.W.R. has appointed a special committee to consider the question of the enlargement of Paddington Station.

St. Marylebone.—HOUSING.—L.C.C. propose to acquire 1.3 acre site in Aberdeen-pl. for housing purposes.

St. Pancras.—HOUSING.—The St. Pancras Housing Society, Ltd., propose to erect 11 flats in Phœnix-rd. to complete the scheme for the development of the Clarendon-pl. (Seymour-st.) area.

Southwark and Lambeth. — RECONSTRUCTION PLAN.—L.C.C. propose to lay out and redevelop an area of about 49 acres in Southwark and Lambeth, at the Elephant and Castle.

Stoke Newington.—HOUSING.—B.C. are to instruct the Town Clerk to negotiate for the lease of a site comprising Nos. 44, 46 and 48, Palatine-rd. on which it is intended to erect six flats.

Stoke Newington.—PUBLIC BATHS.—B.C. propose to acquire sites in Clissold-rd. for the future extension of the Baths Establishments.

Stoke Newington.—SUB-STATIONS.—The B.C. have instructed Messrs. Howes & Jackman (FF.) to prepare plans for the proposed electricity sub-stations to be erected on the Woodberry Down Estate and at Bethune-rd.

Woolwich.—HOUSING.—The Ecclesiastical Commissioners propose to erect three blocks of flats on the Kingsman-rd. site.

Woolwich.—HOUSING.—L.C.C. have approved tentative scheme for the development of the Wrottesley-rd. site by the erection of 130 flat dwellings, estimated to cost £209,200.

(PROVINCIAL)

Bacup.—T.C. to erect 110 houses at Huttock End No. 1 site.

Billingham-on-Tees. — U.D.C. to negotiate with W. M. Doughty, Ltd., builders, West-la., Yarm, for erection of houses.—Plans approved for a dining-hall and kitchen at Billingham South school, for Durham C.C.

Birkenhead.—West Cheshire Joint Board for Mentally Defectives propose Female Staff Hostel and recreation room at Cranage Hall Colony for Mental Defectives, at £43,000.

Bolton.—T.C. propose alterations and improvements at Fishpool Institution, at £6,600.

Bradford.—T.C. propose: Alterations and improvements at Rawson Market; preparing plans for new Civic Centre; branch libraries at Clayton and Swain House.

Bucks.—E.C. propose technical schools, primary and secondary schools, boarding schools and refresher course college.

Caernarvonshire.—Joint Planning Committee approved Penychain Holiday Camp for Butlin, Ltd.—E.C. propose Nursery and Infants' school at Glanadda.

Cheadle, Staffs.—P.C. propose swimming-baths, at £10,000.

Chesterfield.—R.C.C. propose 30 houses at Chesterfield-rd., Brimington, 10 houses at Woodhouse-la., Beighton, and 30 houses at Dark-la., North Wingfield.

Doncaster.—E.C. propose dining-room and kitchen at Toll Bar school, also school canteen at Bentley Village.

Droitwich.—Nu-Way Heating Plants, Ltd., propose factory at Vines-la.

Dudley.—Board of Management of Corbett Hospital propose extensions.

Durham.—Factory to be built at Sherburn, for Fowler & Armstrong, New Elvet, Durham. Architect: E. M. Lawson, Barras-bldgs., Barras Bridge, Newcastle.

East Riding.—E.C. propose 20 Secondary schools and complete reorganisation of primary schools.

Gateshead.—Canteen to be erected at factory of Mary Harris Gowns, Ltd., Gateshead. Architect: J. H. Napper, Eldon-sq., Newcastle.

Gateshead.—Plans by L. G. Canvey and Partners, Carliel House, Newcastle, for extensions to factory of Bush Beard Co., Ltd., North Eastern Trading Estate, have been approved. Office block to be built at factory of De La Rue Gas Development Ltd., North Eastern Trading Estate. Plans by Cackett, Burns Dick and McKellar, 21, Ellison-pl., Newcastle.

Gateshead.—Plans approved for 274 houses at Coach-rd. estate and 439 houses at Lobley Hill for T.C. Plans have been prepared for shopping centre at Beacon Lough and at Highfield estate for T.C.

Gosforth.—U.D.C. is to acquire 88 acres of housing land at Coxlodge.

Haywood.—T.C. propose alterations at Municipal Offices.

Jarrow.—Neuchatel Asphalte Co., Newcastle, to erect factory. Plans by R. Burke, Singleton House, Northumberland-rd., Newcastle.

Liverpool.—E.C. propose primary school at Finch Hall estate.

Manchester.—T.C. propose 92 flats for single women at Baguley Hall estate, Wythenshawe, at £118,400; approved additional studio and lavatory block at Junior School of Art; extensions at North Manchester High school for Boys; County Primary school, Charlestown, Blackley; garage and petrol-filling station, Ashton New-rd., Clayton, for B. Neil, 804, Ashton New-rd.; factory at Rochdale-rd., Collyhurst, for Greengate Colour Works, Ltd.; clothing factory at Oldham-rd., for W. Last, 29, Petworth-st., Cheetham 8.

Newcastle, Staffs.—Newcastle (Staffs) Motor Co., propose showrooms at Lower-st. and Pool Dam.

Northampton.—T.C. propose development of land at Dallington Fields on "Garden City" lines. Plans prepared by R. A. Winfield, B.E., provide for 13,000-15,000 houses, 50 shops, six schools, church, cinema, community centre, welfare clinic, library and two licensed houses.

Oldham.—Taylor Bros. (Fabrics), Ltd., Primrose Mill, propose offices at Primrose-bank.—E.C. propose school at Hathershaw.

Rochdale.—L. C. Hillier, Ltd., Motor Agents and Engineers, Oldham-rd., propose canteen and stores and alterations to repair workshop.

Rotherham.—T.C. approved: Additions at food factory, Greasbro'-rd. and Bridge-st., for Home Baking Co., Ltd.; garage at Greasbro'-st., for W. Jackson & Sons, Ltd.; warehouse at Rawmarsh-rd., for E. & F. Fawley, Ltd.

Salford.—T.C. approved factory for W. Briggs & Co., Ltd.

Scarborough.—T.C. propose: Motor bus station at Weaponness Valley-rd.; 220 houses at Wyndyate site; development of site at Seamer for houses.—T.C. to erect 100 "B.I.S.F." houses at Sandybeds.

Southam.—R.D.C. propose adapting Arundel House for Council Offices and Council chamber, at £4,000.

Thornaby-on-Tees.—Plans under consideration for tyre-rebuilding factory at Thornaby-rd., for J. A. C. Hoyle.

Urmston.—Brothers Chemical Co. (1922), Ltd., 110, Railway-rd., propose factory at Mosley-rd., Trafford Park.

Uttoxeter.—U.D.C. propose development of Heath House estate for houses.

Wakefield.—Park Row Cinemas, Ltd., propose cinema at Batley-rd.—West Riding C.C. propose laundry building at County General Hospital, at £36,000.

Wallasey.—E.C. propose "Somerville" Secondary (Modern) School at Gorsey-la.—T.C. propose additional floor to Highfield Maternity Home, at £13,000, and nurses' home, at £13,000.

Willenhall.—Rubery Owen Housing Association, Ltd., propose houses at York-av.

Worsbro' (Yorks).—Johnson and Barnes, Ltd., Leicester, to acquire site for factory at Elm House estate.

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TENDERS

* Denotes *accepted*.
† Denotes *provisionally accepted*.
‡ Denotes *recommended for acceptance*.
§ Denotes *accepted subject to modification*.
¶ Denotes *accepted by H.M. Government departments*.

Aldershot.—64 houses at Kingsway site, for T.C.: *C. K. Davis, Ltd., Estate Office, Shepperton, Middx, £79,887 (subject to M.H. approval).

Alton.—48 Airey houses, for R.D.C.: ‡Rigby & Co., St. Mary Cray, Kent, £78,498 (subject to M.H. approval).

Annan.—20 Cruden type houses at Silverlaw, for T.C.: *James Laidlaw & Son, Ltd., Ruthergien.

Bakewell.—Two houses at Eyam, for R.D.C. R. Hayhurst, S.: *W. Gregory, Grindleford, nr. Sheffield, £2,448.

Ballyclare.—Six houses at North End, for U.D.C., Logan & Mairs, architects, Ballyclare: *H. S. Morris, Bridge-st., Larne, £9,525.

Bath.—Rebuilding 16 and 18, St. John's-rd., Weston, for T.C. City E.: *B. Ashman, Entry-rise, Combe Down, Bath, £1,898; rebuilding Nos. 9 and 10, Colbourne-rd., Odd Down: *W. C. Wright, Cleevedale-rd., Combe Down, Bath, £1,810.

Bermondsey.—38 flats at Arnold estate, for B.C.: ‡Building Manager, £55,290.

Billesdon.—10 houses at Houghton-on-the-Hill, for R.D.C.: *Sherriff & Co., Ltd., Gipsy-la. Works, Leicester, £14,971.

Blackburn.—150 houses for T.C. W. Pickstone, B.E.: *Blackburn & District Building Trade Employers' Association, 43, Preston New-rd., Blackburn.

Bolton.—57 houses, Blenheim-rd. site, for T.C. C. Herbert. B.E.: *John Dickinson & Co. (Bolton), Ltd., 47, Fairclough-st., Bolton, £55,965.

Bolton.—Rebuilding Hill Fold Mill, Belmont-rd., Astley Bridge, for W. A. Openshaw, Ltd. Bradshaw Gass & Hope (FF.), 19, Silverwell-st.: *John Dickinson & Co. (Bolton), Ltd., 47, Fairclough-st., Bolton.

Breconshire.—Alterations at Hay P.A.I., for C.C.: *Thomas Grant, Brecon, £2,499.

Bury.—Houses for T.C. J. Chadwick, B.E. 20 at Whitefield-rd.: *Bainbridge Bros., 25, Uplands-rd., Flixton, nr. Manchester; 14 at Tandr.: *J. E. France, 45, Assheton-rd., New Moston, Failsworth, Manchester.

Caistor (Lincs.)—16 houses and 12 bungalows, for R.D.C. Four houses and four bungalows: *R. M. Phillips and Son, Ltd., Bigby-st., Brigg, Lincs, £4,466 and £3,601; four bungalows: *C. W. Marshall & Son, Nettleton, Caistor, £4,077; 12 houses and four bungalows, *Scupham & Son, Jameson Bridge-st., Market Rasen, £20,677.

Cambridgeshire.—Dining-room and rest-room, etc., for nurses at Chesterton Hospital, for P.A.C.: *Kidman & Sons, Ltd., 64, Victoria-rd., Cambridge, £3,587.

Chester.—148 houses at Blacon No. 1 site, for T.C.: ‡Thomas Warrington & Sons, Ltd., Ellesmere Port, £194,980 (subject to M.H. approval).

Disley.—Three groups of four houses type A. Five pairs of Type B and eight pairs of Type C. houses, Bentside housing site, for R.D.C. W. C. Young (F.), 195, Oxford-rd., Chorlton-upon-Medlock, Manchester 13: *F. J. Gibson (Builder), Ltd., 38a, Manchester-rd., Wilmslow, Ches, £48,249.

Dursley.—20 houses at Draycott, Cam., for R.D.C. I. M. Nicholson, M.I.M. & Cy.E., E. and S.: *Bennett Housing Association, Ltd., Stinchcombe Manor, Dursley.

Ealing.—Conversion of 15, Cleveland-rd., into 10 flatlets, for T.C.: *Farley & Co., £4,684; erection of 4 flats at Deans-rd., Hanwell, for T.C.: *Web Construction Co., £3,975.

Ellesmere.—Four houses at Dudleston, for U.D.C.: *Huxley & Co., Malpas, £6,275.

Gateshead.—Nine houses in flats at Saltwell rd., for T.C.: *H. Durham, Durham-rd., Low Fell, Gateshead, £2,041 per house (two flats).

Gosforth (Northumberland). — Three-storey block of flats, comprising 24 dwellings, for U.D.C.: *M. J. Liddell & Sons, Hunters-rd., Gosforth, £17,852 (subject to M.H. approval).

Gosforth.—52 Howard type houses at Beaumont-ter. site, for U.D.C.: *Direct Labour.

Great Harwood.—32 houses, Waverledge site, for U.D.C.: *W. Livesey & Sons, Ltd., Nova Scotia Works, Blackburn, £39,800.

Gwyrfai.—Pair of demonstration houses, "Airey" precast type at Deiniolen, for R.D.C.: *Richard Costain, Ltd., Keyes House, Dolphin-sq., London, S.W.1.

Hammersmith.—Demolition of trench shelters at various parks, for B.C.: *G. Wimpey & Co., Ltd., Denham, £5,072.

Hampstead.—92 flats at Parkhill-rd. housing scheme, for B.C.: *Wm. Moss & Sons, Ltd., North Circular-rd., Cricklewood, N.W.2, £183,000 (subject to any necessary sanctions).

Hartismere.—68 houses on five sites, for R.D.C. Leslie Barefoot (A.), The Thorofare, Ipswich: *W. & P. Elliott, Bedfield (50); *Rogers Bros., Felixstowe (18).

Hay.—24 dwellings and road and sewer work, for U.D.C. W. D. Morgan, architect, Belle Vue Hay: *David Yeomans (Contractors), Ltd., Lower Blakemere, Hereford, £31,960.

Hertford.—Eight houses at Lower Green, Tewin, for R.D.C.: *Daniels Bros., £9,258 (subject to M.H. approval).

Hexham.—24 houses at Wylam, for R.D.C.: *R. C. Williamsons, Ltd., Rowlands Gill, Co. Durham.

Honiton.—Three blocks of four houses and four pairs houses at Northcote-la. Lucas, Roberts & Brown, architects and surveyors, Barnfield Hill, Exeter. Quantities by L. C. Wakeman & Partners: *The Exeter Building Contractors, Ltd., 14, Dix's Field, Exeter.

Hove.—100 houses at Sunninghill estate, for B.C.: ‡Cook (Brighton), Ltd., Church-rd., Hove, £112,788.

Huddersfield.—Construction of Digley reservoir, for T.C. G. H. Hill & Sons (Manchester), consulting engineers, 51, Mosley-st., Manchester: *Lehane, Mackenzie & Shand, Ltd., Derby (estimated cost, £851,848).

Huntingdon.—Works for E.C. T. H. Longstaff (F.), County A. Conversion of American Red Cross buildings at Cromwell Walk into County Primary School: *Pettits, Ltd., Green Garth, Godmanchester, Hunts, £3,447; kitchen and dining-room at Huntingdon School: *M. J. Allen & Sons, Brampton, Hunts, £2,675.

Huntingdon Standing Joint Committee.—Eight police houses at two sites. T. H. Longstaff, County S. & A., Walden House, Huntingdon. Four at Fletton: *Hawkins & Son, Old Fletton, Hunts, £6,046; four at Huntingdon: *F. B. Thackray & Co., Ltd., Drydens Walk, Huntingdon, Hunts, £5,759.

Kington.—16 houses for U.D.C.: *W. Seaton, 46, Clarence-rd., Birmingham 17, £1,219 each.

L.C.C.—Contracts exceeding £2,500 in value placed by L.C.C. during period ended October 16: Wiring and fittings for electric lighting, etc., in blocks 3 and 4 of dwellings at South Lambeth estate, Lambeth, Archibald Saville & Co., Ltd., 104, South Lambeth-rd., S.W.8. Erection of blocks 16 to 23 of dwellings, and perambulator and cycle sheds at Barnfield-rd. site, Woolwich, Speirs, Ltd., 66, Victoria-st., S.W.1. Erection of seven blocks of dwellings at Sultanter. area, Camberwell, W. H. Gaze & Sons, Ltd., 23, High-st., Kingston-on-Thames. Erection of blocks 1, 2 and 4 of dwellings at Collingwood estate (Darling-row Area), Bethnal Green, and blocks 1 to 6 of dwellings at Boleyn estate, Islington, William F. Blay, Ltd., 27, Albemarle-st., W.1.

L.C.C.—Seven blocks of dwellings at Sultanter., Camberwell, comprising 174 flats with perambulator sheds, drying room and two small estate stores:—

Richard Costain, Ltd., Westminster...	£232,290
Gee, Walker & Slater, Ltd., Westminster	228,832
Humphreys, Ltd., Knightsbridge	228,676
Taylor Woodrow Construction, Ltd., Southall	215,978
C. Miskin & Sons, Ltd., St. Albans	215,787
George Parker & Sons, Ltd., Camberwell	212,315
R. Mansell, Ltd., Croydon	209,654
Harry Neal, Ltd., St. Marylebone	203,850
*W. H. Gaze & Sons, Ltd., Kingston-on-Thames	203,618

Comparable estimate of George Elkington & Sons, appointed architects, is £202,785.

Lewisham.—Four blocks of flats at Canada House site, for B.C.:—

F. G. Minter, Ltd.	£326,445
Galbraith Bros., Ltd.	321,710
Wates, Ltd.	318,995
W. J. Sims, Sons & Cooke, Ltd.	318,746
John Mowlem & Co., Ltd.	317,245
Geo. Parker & Sons, Ltd.	316,300
Dove Bros., Ltd.	314,150
W. H. Gaze & Sons, Ltd.	312,441
Ashby & Horner, Ltd.	311,803
Y. J. Lovell & Sons, Ltd.	310,600
Higgs & Hill, Ltd.	307,544
Griggs & Son, Ltd.	306,400
F. & H. F. Higgs, Ltd.	306,334
Gee, Walker & Slater, Ltd.	305,154
Thomas & Edge, Ltd.	303,993
T. W. Driver, Ltd.	303,876
Henry Kent (Builders), Ltd.	302,207
Harry Neal, Ltd.	300,978
*A. Roberts & Co., Ltd., 79, Eccleston-sq., S.W.7, £297,411; corrected to	298,086

(Subject to necessary loan sanction.)

London (Air Ministry).—List of contracts to value of £500 or over for week ended October 19:—*Alterations to heating installation:* Fretwell Heating Co., Ltd., London, E.13. *General maintenance work:* Haymills (Contractors), Ltd., London, W.5; F. Hossack & Son, Sleaford.

London (Air Ministry).—Contracts to value of £500 or over for week ended October 12:—Building work: F. R. Hipperson & Son, Ltd., London, E.C.2; F. Rendell & Sons, Ltd., Devizes, Wilts. Electrical work: W. T. Parker, Burton-on-Trent. Dismantling airfield lighting: R. J. Kemp & Co., Ltd., Coalville, Leics; Alpha Manufacturing & Elec. Co., Ltd., London, S.W.4. Heating and hot-water installation: Wm. Freer, Ltd., Leicester. Ventilation to petrol installations: G. N. Haden & Sons, Ltd., London, W.C.1. Clearing balloon sites: Speirs, Ltd., London, S.W.1. Painting work: Wailes Dove Bitumastic, Ltd., London, S.W.1.

London (M.O.W.).—Contracts placed by M.O.W. during week ended October 17:—*London:* Regent's Park, Group 5, renovations and adaptations, Gee, Walker & Slater, Ltd., 100, Park-la., W.1. *Aberdeenshire:* Peterhead, site work and Arcon houses, James Miller & Partners, Ltd., 18, George-st., Edinburgh. *Denbighshire:* Pengelli, school kitchen canteen, G. F. Sumner & Sons, Ltd., Ashfield Stansty, Wrexham. *Dumfriesshire:* Langholme Academy, temp. school classrooms, Cleghorn & Co., Ltd., Burgh-rd., Carlisle. *Essex:* Romford, B.C.3, site work and foundations, aluminium houses, J.M. (Contractors), Ltd., 127-31, Terminal House, Grosvenor-gds., S.W.1. *Glamorgan:* Swansea, Glanmore secondary school, dining-room and kitchen, T. Richards, Northampton Yard, Swansea; Nantymoel senior school, dining-room and kitchen, Wilson's (Bridgend), Ltd., 70a, Nolton-st., Bridgend. *Gloucester:* Filton secondary modern school, temp. building, Stone & Co. (Bristol), Ltd., Redland-rd., Bristol; Bristol, Frenchay Park M/P. Hospital, alterations and redecorations, C. H. Pearce & Sons (Contractors), Ltd., Westbury Hill, Westbury-on-Trym, Bristol. *Hampshire:* Bournemouth, East Howe school, Temp. classrooms, Victor L. Young, 4a, Porchester-rd., Bournemouth. *Herts:* Hatfield, superstructures for Howard houses, J. Howard & Co., 13, Buckingham-gate, S.W.1; Hertford Temp. Sorting Office, erection, J. L. Glasscock & Sons, The Causeway, Bishops Stortford. *Kent:* Beckenham, B.C.3, foundations of aluminium houses, W. J. Mitchell & Son, Ltd., 88, Dulwich Village, S.E.21. *Lanarkshire:* Glasgow, Hyndland senior secondary school, erection of temp. classrooms, E. Corbet & Sons, 66, Bluevale-st., Glasgow, E.1; Glasgow, Cartoraig school, erection of temp. classrooms, E. Corbet & Sons, 68, Bluevale-st., Glasgow, E.1. *Lancs:* Milnrow, Moorhouse school, temp. building, Synroc Products, 9a, Trebeck-st., Mayfair, W.1; Littleborough, central school, temp. building, Synroc Products, 9a, Trebeck-st., Mayfair, W.1; Whitefield, Higer-la. school, temp. building, Arthur Bradshaw, Ltd., 448, Bury New-rd., Prestwich, Manchester; Liverpool, C.B.19, site work for aluminium houses, Norwest Construction Co., Ltd., Ruthven-rd., Liverpool, 21; Huyton, St. Edwards R.C. school, temp. building, Arthur McColl & Son, Cambridge-rd., St. Helens; Manchester, Rose Hill estate, Denton, Howard houses, Greenwoods Building Industries, Ltd., Salem Joinery Works, Lees-rd., Oldham. *Middx:* Acton, B.C.3, site work and foundations, aluminium houses, Tersons, Ltd., 1-9, Seward-st., Goswell-rd., E.C.1; Wembley, Alperton senior school, temp. school buildings, Haymills Bros. (Contractors), Ltd., 235-41, Regent-st., W.1; Wembley, B.C.3, foundations, roads and sewers for aluminium houses, Bradshaw Bros. (Contractors), Ltd., 235-41, Regent-st., W.1.

Midlothian: Edinburgh, Northfield, site work and Tarran houses, James Miller & Partners, Ltd., 18, George-st., Edinburgh. *Monmouthshire:* Rhymney, U.D.C.1, temp. houses, T. Dickinson, Railway-bldgs., Tredegar. *Norfolk:* Smallburgh, R.D.C.1, site work and aluminium houses, Exors. of Edward J. Edwards (decd.), Plumstead-rd. Works, Norwich. *Notts:* West Bridgford, U.D.C.2, site work and aluminium houses, H. Rouse & Sons, High-st., Mansfield Woodhouse. *Oxfordshire:* Headington, Churchill Hospital, adaptations, Knowles & Son (Oxford), Ltd., 35, Holywell-st., Oxford. *Perthshire:* Invergowrie school, temp. classrooms, P. Graham & Sons, Main-st., Bankfoot; Dunbarney school, Bridge of Earn, temp. classrooms, P. Graham & Sons, Main-st., Bankfoot. *Ross:* Ross and Cromarty, site work and Arcon houses, Hendry & Keith, Ltd., 21, Gilcomston Park, Aberdeen. *Stirlingshire:* Lennoxtown, R.C. school, temp. classrooms, Wm. Sprunt & Co., Ltd., Inverallan-rd., Bridge of Allan. *Sussex:* Bognor Regis, Westcoats-la. senior school, temp. building, F. W. Hill, Ltd., Spencer-st., Bognor Regis; Crowborough, Sir Henry Fermors school, temp. building, Y. J. Lovell & Son, Ltd., London-rd., East Grinstead. *Warwickshire:* Birmingham, 26, sites for temp. houses, Rexford (Builders), Ltd., Newborough-rd., Shirley, Birmingham. *Yorks:* Hull, Lambert high school, dining-room and kitchen, Geo. Houlton & Sons, Ltd., 6, Baker-st., Hull; Bradford, Horton Bank Top school, scullery and dining-room, R. J. Patchett, Ltd., Ryefield Works, Clayton Heights, Bradford; Halifax, Princes Mary's girls' high school, kitchen and dining-room, Crossley & Radcliffe, Ltd., Milner-st., Halifax; Rothwell, M/F Salvage Depot, Patrick Green, Romney huts, Wilsons (Whitkirk), Ltd., 375, Selby-rd., Whitkirk, Leeds.

London (War Dept).—Works contracts placed by War Dept. for week ended October 12:—*Warwickshire:* Miscellaneous work, G. Linnecor & Son, Ltd., Birmingham. *Notts:* Miscellaneous work, H. Cox & Son, Ltd., Heanor, Derbys. *Hampshire:* Supply and erection of economic boiler, Hartley & Sugden, Ltd., Halifax.

Lyme Regis.—24 houses at Rough Field site. Lucas, Roberts & Brown, architects and surveyors, Barnfield Hill, Exeter. Quantities by L. C. Wakeman & Partners: *Sidney Pratt (Builders), Ltd., Rydon-la., Exeter.

Manchester.—168 flats, Collyhurst Clearance Area, for T.C. A. McKenzie (L.), Director of Housing: *W. J. Simms, Son & Cooke, Ltd., Haydon-rd., Nottingham.

Mansfield.—Eight pairs of houses on four sites at Bancroft-la. estate, for T.C. E. T. Crowe, B.S.: *G. C. Rippon, Ltd., £4,528; *Chas. Tack, "Branksome," Lichfield-la., £4,519; *Jas. A. Wilson, Hillsway-cres., £4,560; *George Day, £4,554 (all of Mansfield).

Market Harborough.—14 houses at Lubenham, for R.D.C.: *F. Hickman & Son, Market Harborough.

Marlow.—54 houses at Newtown-rd. site, for U.D.C.: *E. J. G. Morgan, Ltd., Oxford-rd., Uxbridge, £66,548 (revised tender).

Middlesbrough.—42 houses at Thorntree estate, for T.C.: *Direct labour.

Midhurst.—18 houses and two "Duplex" type houses, for R.D.C.: *Chapman, Lowry & Puttick, Ltd., Station-rd., Haslemere, £27,785.

Newcastle-on-Tyne.—Science block at King's College, for College Council. Architect: Professor W. B. Edwards, Eldon-pl., Newcastle-on-Tyne: *James R. Rutherford & Sons, Jesmond, Newcastle-on-Tyne (cost, about £150,000).

New Windsor.—18 houses at Clewer Manor housing scheme. Geoffrey S. Baker, M.Inst.M. & Cy.E., B.E. & S.: *E. H. & L. Wells, 7, Almard., Windsor (10); *G. Percy Trentham, Ltd., Long-la., Hillingdon (8).

Paddington.—48 s.c. flats at St. Mary's-sq. scheme, for T.C.: *The Demolition & Construction Co., Ltd., 3, St. James's-sq., S.W.1, £85,273.

Patricroft.—Extensions to Ellesmere Foundry, Canal-bank, for Sir W. H. Bailey & Co., Ltd., Albion Works. W. Thorpe (L.), and H. Hirst Smith (A.), 66, Deansgate, Manchester 3: *J. Cocker, Ltd., Station Saw Mills, Walkden, nr. Manchester.

Peterborough.—18 houses at Dogsthorpe/Newark estate, for T.C. P. J. Smith, City E. Four pairs: *B. Stokeley, Henry-st.; five pairs: *W. Arbon, 38, St. Paul's-rd. (both of Peterborough).

Pickering.—Houses for R.D.C. G. D. Channon (A.), 4, Market-st., Malton, Yorks. 14 at Thornton-le-Dale, Allerston and Lockton: *Jaram & Sons, Gladstone-st., Scarborough, £19,066; four at Sinnington: *H. L. Halder, Pickering, £5,413.

Portsmouth.—Dining-room at St. Mary's Hospital, for T.C.: *Howe & Bishop, Ltd., Clarendon-rd., Landport, £1,461.

Runcorn.—Houses for R.D.C. A. J. King, S. Three pairs, Crescent-dr., Helsby: *J. G. Davies & Co., Main-st., Frodsham via Warrington; Spark-la. and Summer-la. sites, Halton: *Ben Goulden, 20, Halton-rd., Runcorn.

Ryton-on-Tyne.—Further 28 houses at Park Field estate, for U.D.C. T. Charlton, S.: *Direct labour.

St. Albans.—Houses for R.D.C. 22 at Hatfield-rd., Sandridge, and 20 at Sleapshyde: *Davies & Rentoul, Victoria-st., St. Albans, £30,715 and £27,952, respectively; 22 at Dyke-la., Wheathampstead: *W. E. Potterton, Ltd. (through Cosmo Construction Co., Bromley, Kent), £30,438; 17 at Lybury-la., Redbourn: *D. Carter, 6, Brompton-rd., St. Albans, £21,169 (subject to M.H. approval).

Southampton.—196 "Easiform" houses at North-East-rd. site, for Corporation: *J. Laing & Son, Ltd., Mjll Hill, N.W.7, £274,484.

South Molton.—Eight houses, Brayford, for R.D.C. A. G. Oxland, S., 8, East-st.: *Priest Bros., West-st., South Molton, £13,032.

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Spennymoor (Durham).—Factory for Siemens Bros., London: *Higgs & Hill, Ltd., 33, St. Paul-st., Leeds.

Stafford.—36 houses at Silkmore estate, for T.C. T. H. Higson, B.E.: *Morgans (Stafford), Ltd., Wolverhampton-rd., Stafford, £46,338.

Stockport.—16 houses at Naseby-rd., for T.C. Wm. F. Gardner, B.S.: *Emlyn Jones, Priory-la., Reddish, nr. Stockport, £18,288.

Stockport.—Erection of building works and equipment with lavatories, shower baths and urinals, at Millgate Generating Station, for T.C. Boro' Electrical E.: *C. H. Godfrey & Sons, Ltd., Manchester, £1,165.

Tain.—26 five-apartment houses at Glebe site, for T.C. A. Ross & Sons, architects, Queensgate-chbrs., Inverness: *Campbell Estates, Ltd., Cuffley, Herts, £35,751.

Wallasey.—Reconstruction of Mill-la. Hospital, Block No. 2, for T.C. R. F. B. Grundy, B.E.: *Direct Labour Dept., Wallasey Corporation, £3,800.

Wandsworth.—Rebuilding six maisonettes at Gorse Rise, Streatham, for T.C.: *Pressdee, Ltd., Streatham Vale, S.W., £6,400.

Warrington.—Works for T.C. J. Y. Hughes, B.S. Demolition of shelters and reinstatement. 70 shelters: *James Bennett (Haulage), Ltd., £3,230; 34 shelters: *A. Monk & Co., Ltd., Padgate, £1,602; 19 shelters: *F. Jones, £922; 9 shelters: *T. J. Dennehy, £498; 8 shelters: *Wm. Martin, 3, Newlands-dr., Lowton, Leigh, £339; 30 houses at Dallam Farm estate: *Clough & Gaskell, Ltd., Billinge-rd. Saw Mills, Wigan, £30,358 (rest of Warrington).

Wellingborough.—Eight pairs of Swedish houses at Bozeat, Great Doddington, Irchester, and Little Harrowden, for R.D.C.: H. W. Sheffield, S.: *F. Billingham, Northampton, £6,239.

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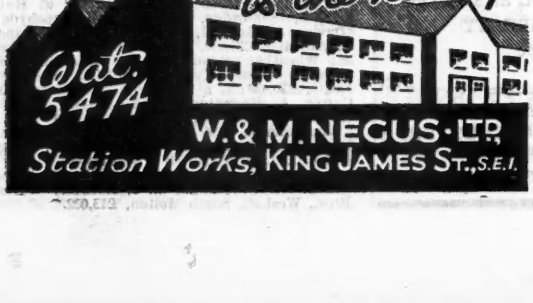
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